THE COMPANY THEY KEEP:

HOMOPHILY IN PRESCHOOL FRIENDSHIP DYADS

BY

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Abstract

Developmental literature suggests that being liked by the peer group and having reciprocated friendships is commonly associated with positive outcomes, while being disliked or lacking reciprocated friends is associated with negative outcomes. Of additional importance are the behavioral characteristics of individuals with whom these close relationships are formed. Although infants and young children interact with peers, preschool may be the first opportunity for children to select peers on their own accord and these interactions may be less directly supervised by parents. Teacher ratings of social dominance, assertion, positive social skills, prosocial strategies of resource control, coercive strategies of resource control, and resource control were collected on 272 preschool aged children (3-6 years) in Lawrence, Kansas and New Haven, Connecticut. Additionally, the children completed a standard sociometric nomination procedure in which they identified classmates with whom they like to play as well as those with whom they do not like to play. Behavioral similarity of reciprocated and non-reciprocated friends was explored. Both variable-centered and person-centered methodological approaches were used. Results revealed that the concept of homophily is less developed in preschool populations and add to the body of developmental literature regarding homophily. Results are discussed in terms of resource control theory, equity theory, and developmental differences in the definition and function of children's friendships.

The Company They Keep: Homophily in Preschool Friendship Dyads

Table of Contents

List of Tables

The Company They Keep: Homophily in Preschool Friendship Dyads

Although general acceptance by the peer group is considered by many to be a developmental advantage (Bagwell, Newcomb, & Bukowski, 1998; Berndt, 2002; Berndt & Perry, 1986; Dunn, 1994; Hartup, 1989, 1996; Hartup & Stevens, 1997; Mize, Ladd, & Price, 1985), one cannot overlook the additional importance of children's mutual relationships or reciprocated friendships. Not only is the presence of friends important, but also the characteristics of those with whom these relationships are formed. Children tend to select friends based on similarity or common interests (Gottman, 1983) and these characteristics have the potential to be amplified through socialization within the friendship dyad. Although children may interact with their peers at a young age, preschool is most likely the first opportunity for children to affiliate with peers of their own volition. Early peer interactions are often shaped and supervised by a child's parents, thus parents have the opportunity to be aware of their child's behavior as well as the behavior of those with whom the interactions take place. As children enter preschool, however, they have the opportunity to seek peers more independently, befriending individuals who may be relatively unknown to their parents. Given the influence of peers and their behavior on a child's development, it is important to not only look at whether or not children have friends, but the characteristics of those with whom friendships are formed.

Importance of Positive Peer Relationships

Peer relationships are an important aspect of a child's development and predictive of current and future adjustment (Bagwell et al., 1998, 2005; Crick & Ladd, 1993; Hoza, Molina, Bukowski, & Sippola, 1995; Ladd, 2006; Parker & Asher, 1987). The peer context provides an opportunity for children to build upon skills established in vertical parent-child interactions and to establish competent ways of interacting with others. Additionally, children develop social competence through increased socialization in the peer domain. Furthermore, peer relationships promote social learning, language development, increased social knowledge, and provide emotional support, security, and a foundation on which future social relationships are established (Hartup, 1989; Ladd, 1988).

Developmental literature suggests that being liked by the peer group and having mutual friendships is commonly associated with positive outcomes, while being disliked is associated with negative outcomes (Hartup, 1996). Lower peer acceptance negatively affects a child's personal and interpersonal development, and may hinder social learning and decrease self-esteem (Ladd, 1988). Children who experience low levels of peer acceptance interact less often with their peers and these interactions typically consist of less mature forms of play (Rubin, Daniels-Beirness, & Hayvren, 1982). These children are rated as being less prosocial, more aggressive (Das & Berndt, 1992; Newcomb, Bukowski, & Pattee, 1993), and more socially withdrawn than their well accepted classmates (Newcomb et al., 1993). Additionally, those low in peer acceptance display lower

levels of sociability, fewer cognitive abilities (Newcomb et al., 1993) and are at increased risk for being treated more negatively by the peer group. Specifically, these children experience increased victimization, exclusion, and rejection of social bids (Buhs & Ladd, 2001).

In addition to experiencing difficulties with social interaction, children rejected by their peers report higher levels of loneliness (Buhs & Ladd, 2001; Crick & Ladd, 1993) and experience various school difficulties such as decreased participation in the classroom, greater school avoidance, and lower school achievement (Buhs & Ladd, 2001; Buhs, Ladd, & Herald, 2006; French, Jansen, Riansari, & Setiono, 2003; Ladd, 1990). Additionally, peer rejection has been associated with future maladjustment and psychopathology (Bagwell et al., 1998; Parker & Asher, 1987).

Importance of Friendships

Although general positive peer relations are important for a child's social development, their importance cannot be recognized without looking into an individual's mutual or reciprocated friendships and the identity of those with whom these relationships are formed (Hartup, 1996). Friendships, or mutual relationships between two individuals, are voluntary associations established based on trust and cooperation (Gifford-Smith & Brownell, 2003). They are characterized by reciprocation and a greater level of intimacy and affiliation (Newcomb & Bagwell, 1995) than what is experienced in non-reciprocated friendships (Ladd, 1988). Friendships constitute developmental advantages for the

socioemotional development of children (Hartup, 1989; Ladd, 1988) as they provide a context in which children learn social rules, receive emotional support and security and they lay the foundation for later relationships (Ladd, 1988).

Similar to peer acceptance, friendships may be considered developmental advantages for children as they provide opportunities for social, emotional, and cognitive development and to increase the knowledge of self and others (Hartup, 1989). Children with at least one mutual friend are more gregarious (Newcomb & Bagwell, 1995), prosocial (Gest, Graham-Bermann, & Hartup, 2001; Newcomb & Bagwell, 1995), display more leadership qualities and positive affect, are less likely to have their feelings easily hurt, and are less likely to boss or tease their classmates (Gest et al., 2001). Additionally, they display higher levels of self-esteem and report being less lonely (Newcomb & Bagwell, 1995). Children without mutual friendships, however, are reported by teachers and peers as being more aggressive and withdrawn as well as lower in academic achievement and social preference within the classroom (French et al., 2003).

Children perceive their friends to provide greater support than nonfriends (Berndt & Perry, 1986) and supportive friendships ease school transitions (Ladd, 1990). Children who enter school with friends view school more favorably, enjoy school more, and display greater academic achievements (Ladd, 1990). Strong friendships also have been associated with increased global self worth, social competence, and fewer internalizing problems (Rubin et al., 2004). In addition to these positive qualities, friends serve as a buffer to peer victimization such that

the predictive relationship between behavior and peer victimization is weakened for individuals having a protective friend. Specifically, victimization has been found to predict an increase in both internalizing and externalizing behaviors in children, an effect that does not hold for children who have a reciprocated friendship (Hodges, Boivin, Vitaro, & Bukowski, 1999). Friendship not only affects the current well being of the child, but adult adjustment as well; having friends in childhood is associated with greater self-worth in adulthood, whereas friendlessness is related to greater psychopathology (Bagwell et al., 1998, 2005).

Interactions among friends are characterized by greater social activity (Newcomb & Bagwell, 1995), including greater reciprocity and responsiveness in social interactions (Newcomb & Brady, 1982). Additionally, task performance among friendship dyads in children is more effective (Newcomb & Bagwell, 1995; Newcomb & Brady, 1982) and when working on a task, friends tend to have more shared goals and joint participation than nonfriend dyads (Strough & Cheng, 2000). Furthermore, when conflict arises among friends, resolution is attained more frequently and amicably than when it arises among nonfriends (Newcomb & Bagwell, 1995). Therefore, there appears to be a broad range of social, cognitive, and psychological benefits to being well accepted by your peers and having reciprocated friendships.

Gender Differences in Friendships

Gender differences in styles of play are well documented and have shown that boys engage in more rough and tumble play and tend to play in larger groups,

whereas girls tend to engage in less rough forms of play in smaller peer groups (Beneson, 1983; Maccoby, 1988; 1990). Additionally, preschool girls tend to select or identify friends who display lower activity levels (e.g., "Moves actively (runs, climbs) when playing indoors") while preschool boys nominate friends who display higher levels of activity (Gleason, Gower, Hohmann, & Gleason, 2005). Furthermore, gender differences in forms of aggression have been reported in preschool populations. Specifically, girls exhibit more relational aggression than boys and boys demonstrate more physical and verbal aggression than girls during free play situations (Ostrov & Keating, 2004). Lastly, young children tend to establish sex-segregated play groups from a very young age. Specifically, it has been argued that young children segregate themselves into same-sex play groups because they tend to be more attracted to same-sex play partners due to increased play compatibility (Maccoby, 1990). Relatedly, research has demonstrated that children as young as preschool engage in social interaction with same-sex peers three times more than they do with cross-sex peers, a trend that increases throughout development (Maccoby, 1988).

Not only do the social interaction patterns of boys and girls differ, but so too do their dyadic interactions. Research has shown gender differences in children's social interactions as young as four years old. Although both genders spend similar amounts of time in dyadic interactions, the interactions of girls tend to be longer, whereas the interactions of boys tend to be larger in number (Benenson, Apostoleris, & Parnass, 1997).

Friendship Formation

Because of the importance of positive peer relations and friendships in a child's social development, it is important to examine how these relationships are formed. Individuals tend to be attracted to each other based on similarities (Gottman, 1983; Hartup, 1989), thus similarity may serve as the foundation for friendship formation. Initially, children's friendships are based on pleasant interactions and common activities, eventually incorporating more sophisticated qualities such as psychological similarities and emotional reciprocation as the child matures.

Gottman (1983) identified six social processes that are evident as unacquainted children form a friendship. These processes include communication clarity and connectedness, information exchange, establishing a common ground activity, conflict resolution, positive reciprocity, and self-disclosure of feelings. Most relevant to the present research is establishing a common ground activity which is characterized by finding an activity to do together and exploring similarities and differences of the play partner (Gottman, 1983). By extension, finding a common ground activity may be established based on or further reinforced by similarity in behaviors such as aggression, assertion, and positive social skills as well as the child's ability to gain access to resources. Furthermore, the fundamental qualities of all of the processes of friendship formation identified by Gottman involve communication and reciprocity, both of which influence the establishment of common ground activities. Gottman noted that exploring

similarities and differences is an essential component to developing common ground and by extension, the process of exploring similarities and differences may be critical to the formation of friendships among children.

Children may explore similarities and differences not only in activities in which they engage, but in their pattern of social interaction with classmates as well. Because the exploration of similarities and differences is an essential component to friendship formation, children may judge others' behaviors and gravitate toward those who share similar qualities or patterns of interaction. The tendency of mutual friends to possess similar qualities has been referred to as homophily and the possession of similar qualities may provide a basis on which friendships are formed.

Homophily

Homophily refers to the tendency of individuals to affiliate with those who display similar qualities (Kandel, 1978a) and friendships are formed, in part, based on the level of similarity of various characteristics (e.g. social behavior, attitudes, play behaviors) between two individuals (Poulin et al., 1997; Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). Although it is well-documented that children tend to affiliate with peers who are similar in age and gender from the preschool years well into adolescence (Hartup, 1989; Kandel, 1978b; Kupersmidt, DeRosier, & Patterson, 1995; Ladd, 1988), less is known about the similarity of certain behavioral characteristics of these close relationships, especially in preschool populations.

A large amount of previous research has demonstrated homophily in adolescent friendships. Specifically, adolescents have been found to affiliate with peers who report similar levels of illegal drug use, delinquency (Kandel, 1978a, 1978b), internalized distress (Hogue & Steinberg, 1995), as well as those who have similar educational goals, peer activities, and political orientations (Kandel, 1978a, 1978b).

Additionally, research at both the group and dyadic levels has identified similarity among various deviant behaviors in adolescent peer contexts. For example, adolescents tend to belong to peer groups or social networks in which individuals display similar levels of fighting, rumor spreading, teasing, and exclusion (Espelage, Holt, & Henkel, 2003) and the antisocial tendencies of these peer groups predict the antisocial tendencies of the individuals within these groups (Laird, Pettit, Dodge, & Bates, 1999). Furthermore, adolescents tend to be more similar to reciprocated or mutual friends in levels of aggression (Adams, Bukowski, & Bagwell, 2005; Card & Hodges, 2006; Cillessen, Jiang, West, & Laszkowski, 2005).

Research regarding homophily in elementary and junior high school-aged children suggests that children tend to befriend those who have similar sociometric status (French et al., 2003; Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998; Kupersmidt et al., 1995; Nangle, Erdley, & Gold, 1996; Nangle, Erdley, Zeff, Stanchfield, & Gold, 2004), as well as similar levels of academic achievement (French et al., 2003; Kupersmidt et al., 1995), depression,

and victimization (Haselager et al., 1998). Additionally, school-aged children prefer previously unacquainted peers who display similar levels of parallel, exploratory, constructive, and dramatic play behaviors (Rubin et al., 1994).

In regard to homophily of elementary and junior high school-aged children's behavioral attributes, similarity has been identified within friends on aggression (Cairns, Cairns, Neckerman, Gest, & Gariepy, 1988; Kupersmidt et al., 1995; Poulin et al., 1997), fight starting (Nangle et al., 1996; Poulin et al., 1997), antisocial behavior (French et al., 2003; Haselager et al. 1998), disruptive behavior (Nangle et al., 1996), shyness (Haselager et al., 1998; Nangle et al., 1996; Poulin et al., 1997), and withdrawn behavior (French et al., 2003; Kupersmidt et al., 1995). The majority of the research on homophily in children's friendships has identified homophily surrounding delinquent or socially isolative behaviors and few have looked at similarity of socially desirable behaviors in children's friendships. The few studies that have addressed this issue, however, found that children tend to form friendships with individuals who display similar levels of leadership (Nangle et al., 1996; Poulin et al., 1997), cooperation (Nangle et al., 1996), and prosocial behavior (Haselager et al., 1998; Nangle et al., 2004).

Homophily: Selection and Socialization

Similarity among friends has multiple benefits regardless of what the similar behavioral attribute may be. Namely, when friends share similar attitudes and beliefs, there is a sense of validation of those attitudes and beliefs. Furthermore, similarity in friendships provides an opportunity for individuals to

partake in pleasant endeavors with a friend who has similar interests (Aboud & Mendelson, 1996). Traditionally, behavioral similarity in friendship dyads has been associated with two processes: selection and socialization (Hogue & Steinberg, 1995; Kandel, 1978a). These two processes influence behavioral similarity in friendships over time because individuals select peers with similar attributes and, in turn, influence the maintenance of these behaviors through socialization and social interactions with each other. For example, a child may affiliate and form a mutual friendship with a classmate who displays similar levels of prosociality and/or aggression. The initial attraction to and selection of this friend may be due to these behavioral similarities, but over time the child's prosocial and/or aggressive tendencies may be amplified through interactions within the friendship.

The processes of selection and socialization in the formation and maintenance of friendships and behavior have been largely studied in the aggressive behaviors of adolescents. Previous research has demonstrated that adolescents tend to be attracted to classmates who display similar levels of aggression (Bukowski, Sippola, & Newcomb, 2000) and those who tend to form friendships display similar levels of proactive aggression prior to the establishment of the friendship (Poulin & Boivin, 2000). Both studies support the concept of selection, or that individuals tend to identify or seek friends who display similar levels of aggression.

A study that utilized hierarchical linear modeling and a social network analysis of fighting and bullying behavior in early adolescence found that these behaviors not only remained stable for both genders over time, but that the initial level of aggression within the peer group influenced individuals' levels of aggression over time, such that the aggression of individuals embedded in a highly aggressive peer network increased over time (Espelage et al., 2003), supporting the notion of socialization. Additionally, adolescent friendship dyads in which both members of the dyad demonstrate high levels of aggression have been found to serve as a context in which friends can exercise their aggressive tendencies without the negative consequences commonly associated with such behaviors (Dishion, Andrews, & Crosby, 1995) as well as one in which aggressive behavior is reinforced by the friend (Dishion, McCord, & Poulin, 1999). In other words, aggressive behaviors are reinforced and modeled by the friend and the friendship provides a context in which these behaviors are accepted and perhaps even encouraged. Thus, the aggressive behavior is socialized. Interactions among aggressive friends may allow an opportunity for individuals to evaluate their behaviors, which, in turn, may lead to greater exhibition of the aggressive behaviors in both members of the dyad.

Homophily Summary

To date, the vast majority of homophily research has focused on school-aged and adolescent children, and the notion of homophily in preschool-aged children is much less explored. Few studies have assessed behavioral similarity

among friends in this age group. Although there are reports of sex and behavioral similarity in preschool peer group formation (Martin, Fabes, Hanish, & Hollenstein, 2005) and similar levels of social activity among friends, there have been mixed findings regarding the similarity of behavioral profiles in preschool friendships (Barbu, Jouanjean, & Alles-Jardell, 2001). Barbu and colleagues (2001) recorded socially directed behavior (e.g., approach, mutual activity, withdraw) of preschoolers during free play sessions at the school. Through these observations, the researchers created a behavioral profile for the children and they identified friends based on social behaviors that the children directed at each other. Similarity was found among friends on social activity. The similarity of the behavioral profiles of the children was computed separately for each dyad and results revealed some degree of homophily in the behavioral profiles of four of the seven (57%) preschool friendship dyads. Additionally, Howes and Phillipsen (1992) reported that although same-sex preschool friends show similar levels of withdrawn behavior, there is no similarity in their social skills. Other mixed results have show a small effect for homophily in preschoolers' vocabulary, hyperactivity, and prosocial behavior (Dunn & Cutting, 1999) and no effect for their levels of emotional understanding and temperament (Dunn & Cutting, 1999; Gleason et al., 2005). Additional mixed findings regarding gender differences in preschool populations' homophily have been reported. Specifically, effects of homophily have been found for preschool girls, but not boys (Hanish, Martin,

Fabes, Leonard, & Herzog, 2005). Similar gender effects also have been found in young school-age populations (Nangle et al., 2004).

One study, however, did find evidence of homophily in levels of aggression in preschool peer groups. In a study conducted by Farver (1996), teachers rated preschoolers' aggression as well as their social networks within the classroom. This study found a large effect of homophily in a child's level of aggression and the total aggression of that child's social network. It is important to note, however, that investigating homophily in a peer group is a different from examining homophily friendship dyads, which the present analysis will do.

Because of the increasing amount of time that children spend in the peer context as they develop, their behaviors are likely to be influenced by their friends, thus it is important to know the behaviors of the individuals with whom these close relationships are formed. Preschool may be the first time that children interact with their peers on a regular basis and away from parents. Additionally, preschoolers can actively choose with whom they play with and with whom they do not while they are at school. Given the protective value of friendships and the impact they have on both current and future social and psychological adjustment as well as school achievement, it is crucial to identify the classmates with whom preschoolers form mutual friendships as well as the behaviors of these friends. Although children may seek friends who are similar to them on certain characteristics, these characteristics will continue to be influenced through the friendship. As noted previously, the vast majority of research in this area has

focused primarily on delinquent behaviors (e.g., disruptiveness, fighting, drug use) of school-aged children and adolescents. The data presented here will build upon the current state of homophily research by addressing similarity of aggression, aggressive self expression, assertive self expression, positive social skills, prosocial resource control, coercive resource control, and general resource control in preschool-aged friendship dyads. Specifically, analyses will assess the degree of homophily in reciprocated (i.e., classmates who return the friendship nomination) and non-reciprocated (i.e., classmates who do not return the friendship nomination) preschool friendship dyads.

Variable-centered Versus Person-centered Approaches

Variable-centered and person-centered approaches to data analysis vary methodologically and theoretically, but both can contribute complementary findings to the literature. The present study will use both approaches to demonstrate the distinct contributions of these methods. In addition to studying the general concept of homophily through a variable-centered correlational approach, it is important to address this concept through a person-centered approach as well to elucidate more complex patterns of homophily in preschool friendship dyads.

Traditionally, the variable-centered approach has been the most widely used in developmental literature in general and specifically in the majority of the aforementioned work. This approach focuses on relationships among variables across all individuals in a sample (Hartup & van Lieshout, 1995; Hawley,

Johnson, Mize, & McNamara, in press) and is commonly used to test theories concerning the hypotheses about relationships between these variables (Bergman & Trost, 2006). Furthermore, the variable-centered approach attempts to explain behavior in terms of the relationships between the variables of interest and how the interactions of these variables, in turn, influence behavior (Bates, 2000). Variable-centered approaches incorporate linear statistic models and use analyses such as correlations, regression, and structural equation modeling (Bergman & Trost, 2006), which allow for strong tests of hypotheses regarding the ways in which variables interact to influence behavior (Bates, 2000). Therefore, a variable-centered approach was used to test the similarity hypothesis in reciprocated and non-reciprocated friendship dyads in preschool children.

Alternate analysis perspectives, such as the person-centered approach, tend to be less used in the developmental literature. A person-centered analysis is a pattern-oriented approach that focuses on behavior and functioning in terms of patterns apparent in a set of theoretically important variables (e.g., Hawley et al., in press). Methodologically, this approach identifies a group of variables, or a subsystem, which is theoretically relevant to the individuals being studied (Bergman & Trost, 2006). Furthermore, the person-centered approach asserts that these patterns of variables interact to affect behavior through the influence that these behaviors have on the total functioning of the individual (Bates, 2000). Person-centered approaches use statistical techniques such as cluster analysis. A person-centered approach was used in the present study to test hypotheses

regarding friendship formation among various groups of children who are similar in a theoretically important way.

Resource Control Theory

In addition to testing the similarity hypothesis in a general sample of preschool children using a variable-centered approach, a person-centered approach driven by the theoretical framework of resource control theory (RCT) also was employed. RCT is a strategy-based approach to social dominance in which social dominance is defined as the ability to control resources (Hawley, 1999). This theory posits that the most socially dominant individuals are the individuals who possess the ability to control resources in the company of the social group (Hawley, 2002). Furthermore, these socially dominant individuals use differential strategies of control to acquire resources in the peer group (Hawley, 1999; Hawley, 2003a, b).

RCT identifies two main types of strategies that individuals use to control resources: prosocial resource control strategies (e.g., persuasion, cooperation, helping) and coercive resource control strategies (e.g., hitting, threatening, taking). In a sense, prosocial strategies are characterized as an indirect route a resource, as individuals who employ these strategies attempt to gain access to resources in a manner that establishes and maintains peer relationships. Coercive strategies, on the other hand, serve as a more direct route to resource acquisition, as individuals who employ these strategies attempt to gain resources while disregarding other members of the peer group and the repercussions that the

particular strategy may have on their current and future social relationships (Hawley, 1999).

RCT has identified five person-centered typologies of resource control that characterize individuals according to the strategies employed to gain access to resources. These groups are derived based on individual's differential use of prosocial and coercive strategies of resource control, relative to other members of the social group. Bistrategic resource controllers employ high levels of both prosocial and coercive strategies, while noncontrollers employ low levels of both prosocial and coercive resource control strategies. Prosocial resource controllers employ predominantly prosocial strategies, while coercive controllers utilize mostly coercive strategies. Lastly, typical controllers employ average amounts of both coercive and prosocial strategies to gain access to resources within the peer group (Hawley, 1999; Hawley, 2003 a, b).

The empirical findings of studies conducted within a resource control theoretic framework have repeatedly demonstrated that the most socially dominant individuals are the bistrategic controllers, a group of individuals characterized by their use of both prosocial and coercive strategies of resource control. That is, bistrategic controllers are more successful at controlling resources than others. Therefore, according to RCT, these individuals are, by definition, socially dominant (Hawley, 1999). Dominant individuals appear to effectively use coercive strategies, such as aggression, while simultaneously interacting with individuals in a prosocial and cooperative manner. In a sense,

they balance getting ahead with getting along. Collectively, the differential use of these strategies serves to foster the development of social relationships, while increasing the probability of successful acquisition of limited resources in the future. Simply put, the dominant individuals need the group members to gain resources for the group, but must compete within this group to acquire these resources for themselves (Hawley, 2003a).

Differential use of prosocial and coercive strategies has been identified in populations of children in preschool (Hawley, 2003b), late childhood (Hawley, Little, & Pasupathi, 2002), adolescence (Hawley, 2003a), and emerging adulthood (Hawley, Shorey, & Alderman, in preparation). Bistrategics are highly successful at resource acquisition within the peer group, thus they are socially dominant individuals. Noncontrollers, on the other hand, are the least successful at resource acquisition within the peer group (Hawley, 1999; Hawley, 2003a, b; Hawley et al., 2002). Additionally, the bistrategic controllers are deemed highly aggressive according to self, peer, and teacher reports. Traditional developmental research using a variable-centered approach commonly associates high levels of aggression with negative outcomes such as peer rejection. Analyses conducted with a person-centered approach using this theoretical framework, however, demonstrate that this group of highly aggressive individuals does not experience the negative consequences typically observed in the variable-centered developmental literature.

Using a person-centered approach, bistrategic controllers acquire desirable resources via coercive and prosocial strategies of resource control, yet they experience positive outcomes typically associated with prosociality. Although bistrategic resource controllers report high levels of aggression, they exhibit characteristics not commonly associated with aggression in the developmental literature. Despite being highly aggressive, bistrategics are socially competent, morally astute, popular, socially accepted, conscientious, adept at reading social cues, and well accepted by their peers (Hawley, 2003a,b; Hawley, Little, & Card, 2007). Additionally, bistrategics are not deficient in their number of reciprocated friendships and these friendships are characterized as intimate and fun (Hawley et al., 2007). Lastly, bistrategics appear to be socially central which may be an explanation as to why they receive a high number of positive peer nominations. The fact that these individuals are held in such high regard by their peers corresponds to the social centrality hypothesis aspect of RCT, which states that group members should grant status to the socially dominant members of the group. As stated earlier, RCT defines social dominance in terms of relative success at competition resulting in the acquisition of resources and the socially central and dominant individuals will be those who control the resources (Hawley, 1999; Hawley et al., 2007). In line with this component of RCT, the bistrategic controllers will be watched by their peers and are viewed by peers and teachers to be highly attractive social partners (Hawley, 2003a). Simply put, bistrategic controllers are influential in both positive and negative ways and receive positive

regard from their peers (Hawley, 1999), thus affording them social centrality in the peer group.

RCT gives rise to hypotheses that confront traditional findings regarding aggression from a variable-centered approach. Namely, in contrast to the traditional variable-centered view that aggression is maladaptive, RCT posits that not all children who are highly aggressive are socially repellent. The present study used a person-centered approach based on the five resource control typologies discussed above to predict which preschoolers would form friendships. Additionally, a social exchange theoretic framework informed the hypothesis and the results regarding which children reciprocated friendship nominations and which children did not reciprocate friendship nominations of their classmates.

Social Exchange Theory

Although the general concept of homophily has been well studied, there has been little explanation as to which attributes individuals should display similar levels and why. Different theoretical perspectives may allow us to make predictions about who will form relationships with whom, and may aid in illuminating why individuals tend to form relationships with similar others. Social exchange theory (SET) is one of human relationships based on economic ideas and posits that human behavior is the basic component of exchange. According to this theory, individuals interact through the exchange of resources and human relationships are formed, in part, by an individual's internal cost-benefit analysis of the relationship (Walster, Walster, & Berscheid, 1978). As the exchange of

resources is essential in basic social interactions, an individual may seek a friend who has access to these resources (e.g., a bistrategic) and thus can offer a great deal of benefit. This potential benefit, however, is weighed against the cost of what it will take to form and maintain that relationship. Furthermore, SET asserts that choices are made according to what will maximize the benefits for that individual (Walster et al., 1978).

SET gave rise to Equity Theory (ET) which states that individuals strive not only to maximize the benefits they receive from a relationship, but to maintain equity in the relationship. An equitable relationship is one in which the costs to and the benefits for an individual are relatively equal (Walster et. al, 1978). In a sense, this is a relationship in which the individual asserts a certain amount of cost to the relationship, but gets a comparable degree of benefit from the relationship and may provide an explanation as to why individuals tend to form relationships with those who are similar on certain characteristics. Walster and colleagues (1978) outlined four basic components to ET of social behavior, two of which are relevant for the present analysis. First, and in accordance with SET, individuals will strive maximize their benefits (i.e. benefits > costs). Second, individuals strive for equitable relationships and when in an inequitable relationship, they will seek to reinstate equity.

Social exchange theories, and ET in particular, argue that the formation and maintenance of friendships is based on the cost – benefit analysis, and ultimately the residual benefits (benefits – costs = residual benefits) that an

individual receives from the relationship. This theory is different from the traditional developmental view of friendship and homophily. Specifically, the traditional developmental view of friendship is that having friends positively contributes to the social development of the individual. However, this traditional framework does not have any consistent or deeply theoretical explanation as to why individuals become friends and maintain the friendship. Similarly, homophily suggests that individuals select friends who are similar on certain attributes (birds of a feather flock together) without any theoretical explanation as to why individuals select friends who are behaviorally similar. ET, on the other hand, may provide a theoretical explanation as to why individuals become friends and strive to maintain the friendship. More specifically, ET may allow us to make predictions and explain why individuals who are behaviorally similar become friends. It provides a theoretical framework that allows one to make predictions about which individuals will form relationships based on the costs and benefits associated with the formation and maintenance of the relationship and provide predictions for the person-centered analyses assessing which individuals will form reciprocated relationships with whom. Furthermore, ET will assist in the explanation of the findings of the present analyses. The predictions that one can make from a SET perspective, and ET in particular, may add to the concept of homophily and the assertion that friends form relationships based on behavioral similarity by providing a reasonable theoretical framework as to why individuals

tend to be similar to their reciprocated friends and dissimilar or not similar to their non-reciprocated friends.

Specifically, it was hypothesized that preschoolers with similar levels of coercive and prosocial resource control strategy use (i.e., those with the same resource control typologies) will form reciprocated friendships with each other (e.g. like will attract like). Using the typologies identified in RCT, it is hypothesized that bistrategic controllers will form reciprocated relationships with bistrategic controllers; prosocial controllers will form reciprocated friendships with prosocial controllers and so on. This hypothesis was based on the concept of homophily and the theoretical explanation of the results will be based on ET. According to ET, these 'like attract like' or homophily relationships will be equitable because both members of the dyad will contribute a relatively equal amount of resources to the group. Additionally, these equitable relationships are most likely to be reciprocated because individuals strive for equity in their relationships, thus the individual will strive to maintain this equitable relationship.

A second hypothesis following this line of reasoning concerns the non-reciprocated friendship dyads of preschoolers. It was hypothesized that preschoolers who display different levels of coercive and prosocial strategy use (i.e., those with different resource control typologies) will not form reciprocated friendships. Again, this hypothesis was based on the concept of homophily and ET. Additionally, ET will inform a theoretical explanation of the results. According to ET, individuals strive to form and maintain relationships that are

equitable. Therefore, it was hypothesized that because these non-reciprocated friendships are inequitable (e.g., bistrategic controller/noncontroller) one or both members of the friendship dyad will not strive to maintain the relationship, thus these inequitable relationships will comprise the non-reciprocated friendships of preschool children.

Furthermore, based on RCT and ET, it was hypothesized that the bistrategic controllers will receive the most friendship nominations or be identified as friends more than the children in the other person-centered resource control typologies. This was hypothesized because bistrategic controllers are, in fact, the most socially dominant and they have access to desirable resources. A resource control theoretic framework may assert that bistrategic controllers are themselves a resource and thus should be sought out by the peer group. This is in line with the social centrality hypothesis discussed previously. From an ET viewpoint, bistrategic controllers will receive the most friendship nominations because they are socially dominant and may offer a great deal of benefit to individuals who are their friends, by providing their friends with indirect access to resources. Therefore, it was hypothesized that classmates may seek bistrategics as individuals with whom they like to play, thus they will be identified as friends more often than children in the other person-centered resource control typologies and receive the most friendship nominations from their classmates. Furthermore, bistrategic controllers will attract the friendship nominations of their classmates

because they have the power to control the resources. This explanation is in line with both RCT and ET.

Questions of the Present Study

Variable-centered hypotheses. A variable-centered approach was used to test the similarity or homophily hypothesis, that in general, children will form relationships with those who are similar on various characteristics. These analyses highlight the relationships among the variables and do not focus on the person-centered resource control typologies. Questions raised by the similarity hypothesis center around who children will seek out as their friends. Based on the notion that children are behaviorally similar to their reciprocated friends, it was hypothesized that an individual's behavioral score on overt and relational aggression, the three higher order factors of aggressive self expression, assertive self expression, and positive social skills as well as the three constructs of prosocial, coercive, and general resource control will be positively correlated with the scores of the individuals who reciprocate the friendship nomination. Inversely, it was hypothesized that the relationship among these variables in unilateral or non-reciprocated friendships will have a zero correlation or be negatively correlated.

Person-centered hypotheses. The person-centered analyses in the present study were based on the person-centered resource control typologies discussed previously. Hypotheses based on the friendships of the person-centered resource control typologies are based upon the total number of friendship nominations the children receive as well as the resource control typology of the reciprocated and

non-reciprocated friends of each resource control type. This approach was used to test the hypothesis that bistrategic controllers will receive the most friendship nominations due to their ability to control resources and the great deal of benefit they can offer to their friends. Additionally, it was hypothesized that equitable relationships will be reciprocated and inequitable relationships will not be reciprocated in this preschool sample. Specifically, it was hypothesized that the reciprocated friendships of preschoolers will be the most equitable as these dyads were hypothesized to be formed by children who exhibit the same resource control strategies (e.g. bistrategic controller/bistrategic controller; coercive controller/coercive controller). Lastly, it was hypothesized that non-reciprocated friendships will be inequitable relationships in which there is an imbalance of costs and benefits for one or both members of the dyad. In other words, it was hypothesized that the inequitable relationships would be those in which individuals possess different strategies of resource control and differential ability to gain access to resources (e.g. bistrategic controller/coercive controller; prosocial controller/typical controller), thus they will be inequitable and therefore not reciprocated.

Method

Participants

Participants included 272 preschool children aged 3 to 5 years old (M = 4.04, SD = .78) recruited from three preschools in Lawrence, KS and six preschools in New Haven, CT. Approximately 70.96% of the sample was

European-American, 17.28% African or African-American, 8.09% Asian or Asian-American, 2.94% Hispanic, and less than 1% was Native American. Of this sample, 144 (52.94%) children were female and 128 (47.06%) were male. All procedures were approved by the University's institutional review boards, written parental consent was obtained for all participating children, and child assent was obtained prior to the child interview. Over 85% of the families invited agreed to participate. At least one teacher from each classroom participated.

Procedure

Teacher questionnaire. Participating teachers completed multi-item questionnaires in reference to each participating child. These questionnaires measured the teacher's perceptions of each child's aggressive behavior, prosocial behavior, personality, resource control strategies, and social acceptance. Teachers indicated how true certain behaviors were for each child on a seven point Likert scale, ranging from hardly true (1) to mostly true (7). Teachers were given this questionnaire and asked return it to the researchers in the sealed envelope provided upon completion. The present work will explore the teachers' ratings of children's aggression, emotional manipulation, personality, attention to social cues, hyperactivity, prosocial resource control, coercive resource control, and general resource controlling behaviors. Additionally, as part of the questionnaire, teachers were asked sociometric type questions which included "Who tends to quarrel with others?" and "Who is a classroom bully?" When two teachers in a single classroom completed a questionnaire, the average of their responses was

taken to represent the child's teacher-rated behaviors. All teacher-rated items were standardized within the classroom to control for differences in classroom size. The average number of children in each classroom was 17 (range 6 to 36).

Child interview. Individual photographs were taken of participating children. These photographs were printed in black and white and laminated for use during the child interview. Participating children were interviewed two times during preschool, each interview lasting 15-20 minutes, over a one month period. Interviews were conducted by trained research assistants. Tests appropriate for the present work include a standard sociometric procedure.

Child sociometrics. During the interview, children were shown black and white photographs of participating classmates. These pictures were displayed in a random array on a magnetic whiteboard. A standard nominations procedure was used to assess peer relationships within the classroom. Children were asked six questions regarding their classmates. The questions relevant to the present work are "Who do you like to play with the most?" (liked most nominations) and "Who do you not play with?" (liked least nominations). Children were asked these questions and instructed to point to the pictures of their classmates who best fit the description. Children were allowed up to ten responses. Although, cross-sex nominations were permitted the vast majority of responses given were same-sex nominations, therefore the present analyses focused solely on same-sex nominations. The total number of nominations each child received for each

question was standardized within classroom to control for differences in classroom size.

Identification of Identified, Reciprocated, and Non-Reciprocated Friendships

Indistinguishable and distinguishable dyads. Dyadic pairs can be categorized as either indistinguishable (or exchangeable) or distinguishable. Individuals belonging to indistinguishable dyads do not have distinct roles in the dyad. Because members of these dyads are seen as interchangeable, the members of the dyad are expected neither to vary on any of the variables studied nor to demonstrate different relationships among these variables for any theoretically meaningful reason. A common example of such dyads is same-sex reciprocal friends. Distinguishable dyads, on the other hand are those in which the members of the dyad have distinct roles. Therefore, the members would be expected to differ on certain variables and/or their relationships among variables in a theoretically meaningful way. Common examples of distinguishable dyads include parent-child dyads (Griffin & Gonzalez, 1995; Kenny, Kashy, & Cook, 2006; Selig, McNamara, Card, & Little, in preparation).

Identified friends. Children were asked to identify the classmates with whom they most like to play. By examining the identified friends of the participants, each child's reciprocated and non-reciprocated friendships were identified.

Reciprocated friends: Indistinguishable dyads. Once the children identified classmates with whom they like to play, the mutuality or reciprocation

of each child's identified friends was assessed. A reciprocated friendship was present when the child nominated a classmate as a person he or she likes to play with the most and that nomination was returned by that classmate in any of the ten nomination positions. The reciprocated friendship dyads were considered to be indistinguishable (or exchangeable) because both members from the dyad are from the same category in that they both nominated each other as a friend (Griffin & Gonzalez, 1995; Kenny et al., 2006). In other words, both members of the dyad nominated the other, therefore each member is indistinguishable or interchangeable.

Non-reciprocated friends: Distinguishable dyads. Alternatively, non-reciprocated friendships also were assessed. A non-reciprocated friendship was present when a child identified or nominated a classmate as a person he or she likes to play with the most and the nomination was not returned or reciprocated by that classmate in any of the ten nomination positions. The non-reciprocated friendship dyads were considered to be distinguishable because there is a meaningful factor that can be used to distinguish between the two members of the dyad (Gonzalez & Griffin, 1999; Kenny et al., 2006). In this case, the meaningful factor that distinguishes the two members of a non-reciprocated friendship dyad is whether or not the child gave the nomination or received the nomination.

Variable-centered and Person-centered Analyses: Friendship Variables

Social preference. Social preference by the peer group was assessed via results obtained from the sociometric procedure. Each child's social preference

score was computed by subtracting his or her number of liked least nominations from his or her number of liked most nominations received from classmates. Social preferences scores were standardized within classroom to control for differences in classroom size.

Social appeal. To determine the degree to which a child was sought out by his or her classmates as someone with whom they would like to play, a variable termed social appeal was created. This variable comprised the total number of friendship nominations each child received. This variable was standardized within each classroom to account for differences in classroom size.

Number of friends identified. This variable comprised the total number of friendship nominations each child made. This variable was standardized within each classroom to account for differences in classroom size. For the present analyses, number of friends identified represents the total number of nominations a child made, regardless of whether or not the nomination was reciprocated.

Number of reciprocated friendships. A variable reflecting the total number of reciprocated friendships each child had was calculated to illustrate the total number of reciprocated or mutual friendships for each child. A reciprocated friendship was present when a child nominated a classmate as a friend and the classmate returned the nomination. This variable was standardized within each classroom to account for differences in classroom size.

Number of non-reciprocated friends. Lastly, a variable reflecting the total number of non-reciprocated friendships of each child was created to illustrate the

total number of non-reciprocated or unilateral friendships for each child. A non-reciprocated friendship was present when a child nominated a classmate as a friend, but that classmate did not return the nomination. This variable was standardized within classroom to control for differences in classroom size.

Variable-centered Analyses: Child Characteristics

As part of the questionnaire completed by the teachers, questions were posed regarding the child's aggression, emotional manipulation, personality, attention to social cues, hyperactivity, and resource controlling behaviors. All scores were standardized within the classroom to control for differences in classroom size.

Overt and relational aggression. A multi-item aggression scale was designed to distinguish among the various forms (i.e., overt and relational) and functions (i.e., instrumental, dispositional, and reactive) of aggression (Little, Jones, Henrich, & Hawley, 2003; Little, Brauner, Jones, Nock, & Hawley, 2003). The two subscales identifying overt and relational aggression were utilized for the present work. Nine questions assessed *overt aggression* ($\alpha = .95$). Examples of these questions include "S/he starts fights to get what s/he wants," "S/he is the kind of person who pushes, kicks, or punches others," and "S/he fights back when hurt by someone." Similarly, nine questions assessed *relational aggression* ($\alpha = .93$), some of which include "S/he keeps others from being in his/her group of friends to get what he/she wants," "S/he is the kind of person who ignores others

or stops talking to them," and "S/he keeps others from being in his/her group of friends if they have hurt him/her."

Aggressive self expression and assertive self expression[1]. A total of three constructs emerged from an exploratory factor analysis, two of which pertained to aggressive self expression and assertive self expression. The *aggressive self expression* factor (α = .83) comprised aspects of the teacher sociometric items of "Who tends to quarrel with others?" and "Is there a classroom bully?" and teacher ratings of emotional manipulation in a negative way (3 items including "S/he can influence others by acting sad, disappointed, or angry;" α = .63) and teacher-rated aggression (overt and relational aggression collapsed, 18 items, α = .96). These aggression scales distinguished among the forms and functions of aggression, but because overt and relational aggression were highly correlated among the preschoolers in this sample (r = .61), the two scales were combined for the present factor.

The second factor that emerged from this exploratory factor analysis was *assertive self expression* (α = .83). This factor included teacher ratings of three three-item constructs including extraversion (e.g., "is extroverted/energetic;" α = .89), openness to experience (e.g., "is open to experience/adventurous;" α = .71) and reverse-coded neuroticism (e.g., "is fearful/nervous;" α = .59). This factor represents a more socially acceptable form of self expression, which the researchers refer to as assertive self expression, than the aggressive self expression factor described above.

Positive social skills[1]. In addition to the aggressive self expression and assertive self expression factors described above, a third factor, *positive social skills* (α = .83), emerged from the same exploratory factor analysis. This factor comprised socially acceptable and positive aspects of sociability and self control and is composed of five teacher-rated constructs of behavior. The constructs included agreeableness (e.g., "is kind/agreeable;" 3 items, α = .77,), conscientiousness (e.g., "is responsible/dutiful;" 4 items, α = .80), emotional manipulation in a positive way (e.g., "S/he knows how to make someone smile;" 3 items, α = .68), attention to social cues (e.g., "S/he can tell when someone is upset;" 3 items, α = .77), and reverse-coded hyperactivity (e.g., "S/he has difficulty sitting still during lessons, fidgets uneasily in his/her seat, and may also be talkative and noisy;" 2 items, α = .71).

Inter-factor correlations are presented in Table 1.

Although assertive self expression and positive social skills were intercorrelated with aggressive self expression ($p < .0001$) these factors displayed opposite relationships. Specifically, assertive self expression was positively correlated with aggressive self expression ($r = .52$, $p < .0001$), while positive

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[1]Multiple constructs formed each factor. The factors of aggressive self expression, assertive self expression, and positive social skills were derived from teacher-rated constructs of emotional manipulation in a negative way, aggression, extraversion, openness to experience, neuroticism, emotional manipulation in a positive way, attention to social cues, agreeableness, conscientiousness, and hyperactivity. Sample items for each construct are presented above along with the standardized Cronbach Alpha Coefficients for that construct. Additionally, teacher rated sociometric items of "Who tends to quarrel with others?" and "Is there a classroom bully?" were entered in the EFA. *Note:* This factor analysis was a replication of a previously published exploratory factor analysis (Hawley, Johnson, Mize, & McNamara, in press).

social skills was negatively correlated with aggressive self expression ($r = .28$, $p < .0001$). There was not a significant correlation between assertive self expression and positive social skills.

Prosocial resource control. As part of the questionnaire completed by the teachers, questions were posed regarding each child's prosocial resource control strategies. Six items related to this construct ($\alpha = .69$) and referred to the child's use of cooperative or prosocial techniques to gain access to resources. These are strategies in which the child goes through the social group in acceptable ways to gain access to resources. Examples of these questions include "is someone whose plans are usually liked by others and followed by them," "promises friendship (ex: "I'll be your best friend if…') to get what s/he wants," and "gets what s/he wants by being really nice about it."

Coercive resource control. Additionally, the teacher questionnaire posed questions regarding each child's coercive resource control strategies. These are strategies in which the child bypasses the social group to gain access to resources. Six items related to this construct ($\alpha = .92$) and referred to the child's use of direct or coercive techniques to gain access to resources. Examples of these questions include "makes others follow his/her plans to gets what s/he wants," "gets what s/he wants by making verbal threats or threats of aggression," and "is someone who gets others to do what s/he tells them to do, even if they don't really want to."

Resource control. Lastly, the teachers rated each child on his or her overall ability to control resources. Six items related to this construct ($\alpha = .89$) and referred to the child's overall success at gaining access to resources. Examples of these items include "usually gets first access to preferred toys when with peers," "usually gets what s/he wants when with peers," and "usually is the center of attention when with peers."

Person-centered Analyses: Identification of Resource Control Groups

Resource control groups were defined by trichotmizing the distributions of teacher-rated prosocial and coercive strategy use on the full sample of preschool children (Hawley, 2003a, b; Hawley et al., 2002). The distribution was trichotomized based on the sample of preschool children because strategy use, resource control, and social dominance are relative to the peer context in which the child is functioning. The five resource control typologies were identified as follows: (a) *bistrategic controllers* (BC) scored in the top 66th percentile on both the prosocial and coercive control constructs ($n = 57$), (b) *prosocial controllers* (PC) scored in the top 66th percentile on the prosocial control construct, but average or low on the coercive control construct ($n = 36$); (c) *coercive controllers* (CC) scored in the top 66th percentile on the coercive control construct, but average or low on the prosocial control construct ($n = 34$); (d) *typical controllers* (TC) scored less than the 66th percentile on both the prosocial and coercive control constructs, but only in the lower 33rd percentile on one of the two

constructs (n = 85); and (e) *noncontrollers* (NC) scored in the lower 33rd percentile on both the prosocial and coercive control constructs (n = 60).

Data Management

Because members of a dyad are paired together, they are considered to be nonindependent. In a sense, the members of the dyad are not seen as two completely independent observations and special considerations must be taken into account. For this analysis, separate data sets were created for reciprocated and non-reciprocated friendship dyads. These data sets were formed using the pairwise or double entry method. In this structure, each data line contains the individual's scores for each variable as well as the scores for the other member of the dyad on each variable (Gonzalez & Griffin, 1999; Griffin & Gonzalez, 1995; Kenny et al., 2006). To illustrate this data structure, imagine researchers are interested in evaluating the levels of aggression between members of a dyad. On one data line is the first member of the dyad's aggression score (variable name: aggression) followed by the second member's aggression score (variable name: friend aggression). Another key element of this data structure is that each dyad is double entered. The data are double entered in order to estimate an accurate correlation. The ordering of each member of the dyad as Friend 1 or Friend 2 is arbitrary, but switching around the ordering of single entered data will produce different correlations. This problem is solved by double entering the data. For example, if Friend 1 is listed in spot one on the data line and Friend 2 in spot two, then another line of data would be entered with Friend 2 in spot one and Friend 1

in spot 2. Double entering the data ensures that each friend is in the first spot as well as the second spot of the data line. By doing this, an accurate correlation can be obtained. The data for indistinguishable and distinguishable dyads are double entered in the same manner, with one exception: The non-reciprocated distinguishable dyad data set contains a variable that is indicative of whether or not the individual did the nominating or was nominated.

Analytic Strategy

Variable-centered analyses. In order to test the questions posed by the similarity hypothesis, multiple analytic strategies were used. First, intraclass correlations were computed using pairwise correlational methods (Gonzalez & Griffin, 1999; Griffin & Gonzalez, 1995; Kenny et al., 2006) separately for social preference, social appeal, number of friends identified, number of reciprocated friendships, number of non-reciprocated friendships, overt aggression, relational aggression, aggressive self expression, assertive self expression, positive social skills prosocial resource control, coercive resource control, and resource control. The correlations were used to assess the degree of similarity or dissimilarity between an individual and his or her reciprocated friends (the classmates who returned the friendship nomination) and non-reciprocated friends (the classmates who did not return the friendship nomination). The intraclass correlation was obtained slightly differently for indistinguishable and distinguishable dyads. Intraclass correlations for both types of friends were obtained using SAS and LISREL statistical programs. First, Pearson correlations were obtained using SAS

statistical programming. Because the data were double entered, these Pearson correlations were derived using 2*N*, or two times the total number of unique dyads. This results in an inaccurate standard error estimate and an incorrect p value. To correct for this and the nonidenpendence of the dyads, the most conservative estimate – that of assuming total dependency – was assumed. Therefore, the p values were adjusted using *N* (i.e., the total number of unique dyads) in the LISREL program. This basic procedure is the same for both indistinguishable and distinguishable dyads. The difference lies in how the Pearson correlations were obtained. For the indistinguishable dyads, the Pearson correlation was obtained by correlating the variable of interest for Friend 1 with the same variable of interest for Friend 2. In distinguishable dyads, however, the Pearson correlation is obtained by partialling out whether or not the child did the nominating or was nominated. The person-centered resource control typologies were not used in these analyses.

Person-centered analyses. In order to test the homophily, RCT, and ET hypotheses which speculate which children will form relationships, separate chi-squared analyses were performed for reciprocated and non-reciprocated friends. The person-centered resource control typologies were used for these analyses.

Results

Variable-centered Analyses[2]

Consistent with previous findings, children tended to have reciprocated friendships with children who were the same gender ($r = .64$, $p < .0001$) and similar in age[3] ($r = .79$, $p < .0001$).

Relationships among the friendship variables and the outcome variables. Correlations among the friendship variables and the variables of interest are presented in Table 2. Social preference was positively related to social appeal ($r = .78$). Social preference and social appeal were positively related to number of reciprocated friendships ($r_{preference} = .34$; $r_{appeal} = .42$), positive social skills ($r_{preference} = .33$; $r_{appeal} = .29$), prosocial resource control ($r_{preference} = .22$; $r_{appeal} = .20$), and resource control ($r_{preference} = .22$; $r_{appeal} = .20$). Additionally, social appeal was positively related to assertive self expression ($r = .12$). Social preference and social appeal were negatively related to the number of non-reciprocated friendships ($r_{preference} = -.25$; $r_{appeal} = -.28$). Number of friends identified was positively related to number of reciprocated friendships ($r = .34$) and number of non-reciprocated friendships ($r = .86$), yet not related to any of the outcome

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[2]*Canonical correlations in reciprocated and non-reciprocated friendships.* Canonical correlations were used to examine the relationships among the behavioral profile of aggressive self expression, assertive self expression, and positive social skills within reciprocated and non-reciprocated friendships. Canonical correlations among reciprocated friends did not reach significance ($F(9, 311.67) = 1.29$, $p = .24$), nor did canonical correlations among non-reciprocated friends ($F(9, 834.92) = .69$, $p = .72$).

[3]Although there was a significant correlation among age for reciprocated friendships, the researchers note there is a restricted range due to the fact that children may only nominate children in their classroom and preschool classrooms tend to be separated by age.

variables. Number of reciprocated friendships was positively related to positive social skills (r = .17) and negatively related to the number of non-reciprocated friendships (r = -.14). The number of non-reciprocated friendships was not related to any of the outcome variables. Overt and relational aggression were positively correlated (r = .61) and both were positively correlated with aggressive self expression (r_{overt} = .82; $r_{relational}$ = .78) and assertive self expression (r_{overt} = .51; $r_{relational}$ = .48). Additionally, aggressive self expression and assertive self expression were positively correlated (r = .52). The variables of overt aggression, relational aggression, aggressive self expression, and assertive self expression shared similar relationships with the other outcome variables. They all were positively correlated with prosocial resource control (r_{overt} = .35; $r_{relational}$ = .52; r_{agg} = .46; r_{assert} = .55), coercive resource control (r_{overt} = .80; $r_{relational}$ = .67; r_{agg} = .78; r_{assert} = .62), as well as resource control (r_{overt} = .45; $r_{relational}$ = .50; r_{agg} = .51; r_{assert} = .64). and overt aggression, relational aggression, and assertive self expression were negatively correlated with positive social skills (r_{overt} = -.48; $r_{relational}$ = -.21; r_{agg} = -.28). Positive social skills was positively correlated with prosocial resource control (r = .20) and resource control (r = .17) and negatively correlated with coercive resource control (r = -.24). Lastly, prosocial resource control was positive associated with coercive resource control (r = .58) and both prosocial and coercive resource control were positively correlated with resource control ($r_{prosocial}$ = .69; $r_{coercive}$ = .70).

The relationships among the friendship variables and outcome variables displayed similar patterns for both boys (n = 128) and girls (n = 144). As can be seen in Table 3, boys deviated from the overall correlational pattern in a few ways. Social preference was not correlated with the number of non-reciprocated friends, but was positively correlated with coercive resource control (r = .17). Social appeal was not correlated with assertive self expression, but was positively associated with coercive control (r = .20). Thirdly, boys' number of reciprocated friendships was not associated with positive social skills, but it was positively associated with prosocial control (r = .33) and resource control (r = .30). Lastly, there was not a significant relationship between positive social skills and resource control among boys. Additionally, Table 3 shows that social preference and social appeal among girls are not related to prosocial control or resource control. Furthermore, contrary to the correlations for the entire sample, social preference among girls was negatively related to overt aggression (r = -.19) and social appeal was not related to assertive self expression. Lastly, the number of reciprocated friendships is not associated with the number of non-reciprocated friendships among girls.

Intraclass correlations in reciprocated and non-reciprocated friendships. Intraclass correlations among the variables of interest for reciprocated friends are presented Table 4. This table represents the intraclass correlation for the variables of interest for the entire sample (n = 134) as well as boys (n = 59) and girls (n = 75) separately. For the entire sample, significant correlations were found between

reciprocated friends' social preference (r = .29), total number of friends identified (r = .18), and positive social skills (r = .18). Additionally, trends demonstrated that friends displayed similar levels of relational aggression (r = .12), coercive resource control (r = .11), and overall resource control (r = .13). As evidenced in Table 4 intraclass correlations among reciprocated friendship dyads of boys only reached significance for the variable of social preference (r = .33). All other intraclass correlations were nonsignificant among boys. Lastly, Table 4 illustrates significant intraclass correlations among girls on coercive resource control (r = .24) and trend level correlations among girls on number of friendship nominations received (r = -.17), overt aggression (r = .16), relational aggression (r = .16), and resource control (r = .15).

Intraclass correlations among the variables of interest for non-reciprocated friends are presented in Table 5. This table represents the intraclass correlations for the variables of interest for the entire sample (n = 349) as well as boys (n = 153) and girls (n = 196) separately. For the entire sample, significant correlations were found among friends' number of friends identified (r = .14) and number of reciprocated friendships (r = .15). Trends showed a positive relationship among friends' social preference (r = .09) and a negative relationship between members of a non-reciprocated friendship on levels of coercive control (r = -.07). As illustrated in Table 5, significant positive relationships among non-reciprocated boy friends' social preference (r = .15), social appeal (r = .17), and number of reciprocated friendships (r = .25) were found. Additionally, a negative

relationship was found among boys' level of coercive control (r = -.16). No significant intraclass correlations emerged for the non-reciprocated friendships of girls.

Person-centered Analyses

Consistent with previous findings, bistrategic controllers were most effective at resource control ($F(4, 267) = 68.55$, $p < .0001$) and were socially preferred ($F(4, 267) = 3.77$, $p < .01$) by their peers. This finding was corroborated by teacher ($F(4, 148) = 7.33$, $p < .0001$) ratings of peer acceptance which illustrated that bistrategic controllers were among the most well accepted by their peers. Additionally, bistrategic controllers were rated as peer leaders by their teachers ($F(4, 148) = 3.44$, $p < .01$). Lastly, bistrategic controllers received the most friendship nominations ($F(4,267) = 3.81$, $p < .01$). See Table 6 for standardized means and standard errors.

Homophily of resource control types. Table 7 displays the tallies of resource control classification of the target child by resource control subtype of the reciprocated friend for all same-sex reciprocated friendships. As illustrated in this table, there were 268 same-sex reciprocated friendship dyads. Of these reciprocated friendships, 20 of them were bistrategic-bistrategic pairs, 4 were prosocial-prosocial pairs, 26 were typical-typical pairs, and 16 were noncontroller-noncontroller pairs. There are no coercive-coercive reciprocated friendships. This chi-square analysis was not significant ($\chi^2_{(16)} = 13.01$, $p = .67$).

Table 8 displays the tallies of resource control classification of the target child by resource control subtype of the reciprocated friends for boys. As illustrated in this table, there were a total of 118 boy-boy reciprocated friendship dyads. Of these reciprocated friendships, 6 were bistrategic-bistrategic pairs, 8 were typical-typical pairs, and 8 were noncontroller-noncontroller pairs. There were no prosocial-prosocial or coercive-coercive reciprocated friendships among boys. This chi square analysis was not significant ($\chi^2_{(16)} = 13.19$, $p = .65$).

Table 9 displays the tallies of resource control classification of the target child by resource control subtype of the reciprocated friends for girls. As illustrated in this table, there were 150 girl-girl reciprocated friendship dyads. Of these reciprocated friendships, 14 of them were bistrategic-bistrategic pairs, 4 were prosocial-prosocial pairs, 18 were typical-typical pairs, and 8 were noncontroller-noncontroller pairs. There were no coercive-coercive reciprocated friendships among the girls. This chi square analysis was not significant ($\chi^2_{(16)} = 17.78$, $p = .34$).

Table 10 displays the tallies of resource control classification of the target child by resource control subtype of the non-reciprocated friend for all same-sex non-reciprocated friends. As illustrated in this table, there were 349 same-sex non-reciprocated friendship dyads. Of these non-reciprocated friendships, 12 of them were bistrategic-bistrategic pairs, 9 were prosocial-prosocial pairs, 5 were coercive-coercive pairs, 28 were typical-typical pairs, and 13 were noncontroller-

noncontroller pairs. This chi square analysis was not significant ($\chi^2_{(16)} = 17.43$, $p = .36$).

Table 11 displays the tallies of resource control classification of the target child by resource control subtype of the non-reciprocated friend for boys. As illustrated in this table, there were 153 boy-boy non-reciprocated friendship dyads. Of these non-reciprocated friendships, 3 of them were bistrategic-bistrategic pairs, 1 was a prosocial-prosocial pair, 1 was a coercive-coercive pair, 19 were typical-typical pairs, and 10 were noncontroller-noncontroller pairs. This chi square analysis was not significant ($\chi^2_{(16)} = 8.94$, $p = .92$).

Table 12 displays the tallies of resource control classification of the target child by resource control subtype of the non-reciprocated friend for girls. As illustrated in this table, there were 196 girl-girl non-reciprocated friendship dyads. Of these non-reciprocated friendships, 9 of them were bistrategic-bistrategic pairs, 8 were prosocial-prosocial pairs, 4 were coercive-coercive pairs, 9 were typical-typical pairs, and 3 were noncontroller-noncontroller pairs. This chi square analysis was not significant ($\chi^2_{(16)} = 19.23$, $p = .26$).

Discussion

The concept of homophily suggests that 'birds of a feather flock together' and support for this idea has been robust in school-age and adolescent populations. However, few published studies have addressed this concept in preschool-aged children and the results for those that have are mixed. The present study also exhibits mixed findings regarding similarity of various attributes

among reciprocated friends. The hypotheses of the present study were partially supported. Specifically, evidence of some level of homophily was found for social preference, the number of friends identified, relational aggression, positive social skills, prosocial resource control, and general resource control effectiveness in reciprocated friendship dyads.

Although the common assumption of homophily is that like attracts like, other social psychological theories such as equity theory (ET) can be used to further explain why individuals may be attracted to similar others. Specifically, ET states that individuals strive not only to maximize the benefits they receive from a relationship, but to maintain equity in the relationship as well (Walster et. al, 1978). Although ET does not imply that individuals must be similar to be in an equitable relationship, the basic concept can be applied to the study of homophily. Homophily among some of the variables can be explained by ET in that both members are exerting the same amount of these behaviors in their social interactions, thus the relationship may in fact be equitable on these characteristics. Furthermore, and also consistent with ET, relationships in which both members of the dyad are contributing similar amounts of resources may be viewed as equitable because there is not one member of the dyad exerting all of the cost required to obtain the resources for both members. Additionally, the hypothesis that homophily would not be present in non-reciprocated friendships was supported as evidenced by either no relationship or a negative relationship between the characteristics held by non-reciprocated dyad members.

Resource control theory (RCT) is a strategy-based approach to social dominance in which social dominance is defined as the ability to control resources (Hawley, 1999). Person-centered analyses in the present study supported previous findings using a resource control theoretic framework. Consistent with the hypothesis of the present study, bistrategic controllers received the most friendship nominations from their classmates. This finding can be illuminated by both RCT and ET. RCT posits that the most socially attractive individuals are those who are able to effectively gain access to resources. Therefore, their social attractiveness should result in a greater number of peer friendship nominations. ET asserts that individuals try to maximize their benefits with the least amount of cost. Due to their effective resource control, bistrategic controllers may offer a great deal of benefit to those with whom they have relationships. Therefore, individuals may select or identify bistrategic controllers as friends moreso than the other resource controlling typologies due to the great deal of benefit they can offer.

Although homophily has been well documented in school-age and adolescent friendships, support for this similarity hypothesis is less established for preschool friendships. There is little research concerning homophily in preschool friendship dyads and published results are mixed. One study that did find homophily in preschool friendships, however, used teacher reports of aggression as well as teacher reports of friendships (Farver, 1996), introducing problems of shared method variance. This is of importance because while other studies,

including the present analysis, have used teacher reports of behavior, they have used children's reports of friendship.

Consistent with the present findings and in contrast to many studies regarding homophily, Howes and Phillipsen (1992) reported that the reciprocated friendships of preschoolers were not similar on levels of social skills. Additionally, results reported by Barbu and colleagues (2001) showed mixed support for behavioral similarity in preschool friendship dyads. Furthermore, other results have reported no effect of homophily in preschoolers' levels of emotional understanding and temperament (Dunn & Cutting, 1999; Gleason et al., 2005). Collectively, these results suggest that homophily in preschool friendships may not be as pronounced as it is in school-aged and adolescent friendships.

The above findings as well as those of the present study contrast with the robust findings of homophily in the school-age and adolescent literature. Given the unexpected findings, it is important to look further into and better understand the nature of preschool friendships. The mixed findings regarding homophily in preschool friendship dyads may be due to developmental differences in the definition and function of friendships across childhood. Specifically, preschool children may be more likely to classify a friend based on explicit or superficial characteristics such as appearance and possessions, whereas older children may incorporate ideas of more implicit characteristics such as psychological similarity in their definition of a friend. Lastly, in preschool, friends may serve as a play

partner, but as children approach adolescence, friendships may serve as an avenue to identity development.

The small effect of homophily in preschool friendships may have to do with preschoolers' idea of what a friend is. Initially, children's friendships are based on pleasant interactions and common activities, eventually incorporating more sophisticated qualities such as psychological similarities and emotional reciprocation as the child matures. Specifically, when asked questions regarding what a friend is, children ages four and five report qualities involving propinquity and physical characteristics more often than do six and seven year olds (Furman & Bierman, 1983). Furthermore, preschool children describe their friends based on characteristics of common activities, play style, propinquity, and physical possessions (Hayes, 1978; Hayes, Gershman, & Bolin, 1980). Additionally, older children report affection and support in their definition of friendship more often than younger children (Furman & Bierman, 1983). Collectively, this research further illustrates that qualities of friendships involving psychological features increase with age, especially as children enter school. Therefore, there appear to be developmental differences in preschoolers' definition of what a friend is compared to older children. Due to these developmental differences, homophily or similarity in patterns of social interaction, such as prosociality and coercion, may not be a salient and central aspect of preschoolers' friendships. Additionally, these behaviors may be too implicit for preschoolers to identify.

In the present study, preschoolers identified friends based on who they like to play with. This may be addressing a different phenomenon than asking children "Who is your best friend?" Specifically, the friendship choices of preschoolers may be based less on similarity and more on someone with whom they like to play, a common definition of preschool friendships. This is likely the case given the wording of the question posed to the children in this study. It is not until children enter school that behavioral and psychological similarities become definitions of what friends are.

Selman (1980) proposed a developmental model of perspective taking in which an individual progresses from undifferentiated and egocentric perspective taking in the preschool years, to differentiated and subjective perspective taking in middle childhood, to self-reflective and reciprocal perspective taking in late childhood, to third person and mutual perspective taking in early adolescence, and finally to in depth perspective taking through adulthood (see Selman, 1980 for detailed description). Selman noted developmental differences in children's definitions of friendship that correspond to the developmental progression of perspective taking. Specifically, he asserted that there is a developmental progression in the function of friendships and the primary function of friendships in children aged three to six is to serve as a play partner. At this age children are unable to differentiate psychological qualities of an individual. Additionally, children in the earliest stages of perspective taking conceptualize friends based on physical similarity and Selman stated that physical similarity may be the cause of

friend selection in the early years. Furthermore, Selman asserted that because young children are focused on the physical attributes of their friends, they are unable to conceptualize qualities such as trust and intimacy in their definition of a friend. As children develop perspective taking abilities, however, their conception of friendship becomes more complex eventually incorporating qualities such as similarity in play styles, companionship, intimacy, collaboration, mutual interest and support, emotional reciprocation, trust, and in adolescence, psychological needs and personal identity.

In line with Selman's (1980) notion that adolescent friendships incorporate the personal identity of the members of the friendship dyad, Erik Erikson proposed a model of personality development in which the fundamental task of adolescence is to establish a sense of identity (Erikson, 1980). Additionally, research has shown a developmental progression in identity formation. Specifically, relationship identity has been shown to significantly increase across multiple time points from the ages of 12 to 24 years. This finding provides support to the notion that as children develop, relationships become increasingly important and they provide an increasing amount of self-identity for the individual (Meeus & Dekovic, 1995). Thus, identity development may be a function of adolescence and peers may facilitate the development of one's identity. Additionally, previous reports of adolescent homophily propose that friendship dyads may serve as a context in which specific behaviors are reinforced through social interactions within the dyad and friends can explore behaviors and

exhibit aggressive behaviors without the social repercussions commonly associated with them (Dishion et al., 1995; 1999). In a sense, it has been argued that in adolescent friendship dyads, aggressive behaviors are reinforced and modeled by the friend and the friendship provides a context in which these behaviors are accepted and perhaps even encouraged. This similarity of behaviors (whatever the behavior may be) may provide a sense of validation for both members of the dyad and help establish and maintain a sense of identity.

The small effects of homophily in preschool friendship dyads may be a function of the fact that identity formation is not a primary task of this developmental stage. Due to the increasing importance of friendships as children mature and the individual's search for a sense of identity, forming relationships with those who are similar may be an important component of validating and supporting that individual's own identity choices – a function of friendships that may not be present in younger, preschool-aged children.

While the preschool years are a time of much growth in social development, there still remains critical gaps in children's social knowledge, particularly knowledge dealing with social relationships. Additionally, although preschool-aged children demonstrate many of the social skills necessary for the development of social competence (e.g., positive social skills), their knowledge of the implicit processes and dynamics of relationships may be more limited as evidenced by preschoolers' focus on more explicit characteristics of friends. This idea is in line with Piaget's concept of the development of abstract thought.

Younger children are not yet able to think abstractly and therefore focus more on explicit, concrete concepts and ideas. As they develop, however, abstract thought is developed (Piaget, 1968) and older children may be better able to select friends based on more implicit characteristics such as psychological and behavioral features.

Lastly, although the effects of homophily in school-age and adolescent populations seem to be robust, some studies in these older populations also have reported mixed effects. Consistent with the present findings, Hanish and colleagues (2005) showed an effect of homophily for preschool girls, but not boys. Gender effects of homophily also have been found in school-age children. Nangle and colleagues (2004) reported an effect of homophily for school-age girls, but did not find this effect in boys. Additionally, and consistent with the present findings, boys showed dissimilarity effect for those individuals whom they did not like, an effect that was not present in girls. Lastly, research in Chinese school-aged children found mixed results for similarity of aggression in peer groups (Xu, Farver, Schwartz, Chang, 2004).

The results of the studies presented in this discussion, as well as the results of the current study demonstrate that homophily may not be a universal or fundamental concept in friendship formation. Rather, friendship formation is a complex process and may operate differently for different individuals as well as differently in different cultures, which appears to be the case in homophily. Therefore, researchers may need to be more cautious in assuming that processes

such as homophily operate equally for all individuals. Furthermore, homophily in and of itself may not be an adequate theory to explain why individuals form relationships. It does not explain why individuals within a friendship may be similar, which factors contribute to the maintenance of similarity, or which constructs should be similar across friends. Rather, homophily assumes that individuals are similar and that birds of a feather flock together without any theoretical explanation.

Given that the effects of homophily may not be as robust as one might think, especially in preschool populations, more research is needed on the developmental progression of homophily, why some individuals may form relationships with similar others, and which common variables are driving the selection of friends. Specifically, developmental researchers need to identify developmental models that capture the process of transition from relationships that are governed by more explicit processes, as may be the case in preschool, to more implicit processes, as appears to be the case in school-aged and adolescent populations. Additionally, it is important to take a developmental approach to the study of homophily because characteristics that may be important for friendship formation in older children may not apply to younger children. Rather, similarity of different variables may be driving the selection of friends in preschoolers. Therefore, researchers need to approach this population with a different lens which reflects what younger children are able to see and describe. Furthermore, it is important to adapt measures for younger children to better identify variables

that are important for friendship selection in this population and to be sure that the right questions are being asked to the right people.

Of additional importance in the present analyses is the discussion of dyadic data analysis and the multiple ways of analyzing this type of data. Due to the complexities and nonindepedence of dyadic data, special methodological considerations should be taken into account. There are multiple ways of computing intraclass correlations and the present study used the basic pairwise correlational method. Other, more sophisticated methods include computing the intraclass correlation using an ANOVA framework or multilevel modeling (see Kenny et al., 2006 for a review). The pairwise correlational approach was utilized in the present study as an introduction to the complexities of dyadic data analysis and future analyses will incorporate more sophisticated analytical procedures.

Limitations

There are several methodological limitations of the present study. First, all same-sex reciprocated and non-reciprocated friendships within the classroom were considered. Children varied on the number of reciprocated and non-reciprocated friendships they possessed, leaving the problem of unequal contributions of each child's behaviors. Secondly, all of the behavioral variables were derived based on teacher ratings. This is problematic because behavior may be defined by context and children may behave differently around their teachers than when interacting with their peers. If children perceive the behaviors of their peers differently from the teachers, this may affect the results. For example, a

child may be perceived by the teacher as aggressive, but not so by the peer group or by the individual who nominated that individual as his or her friend. Therefore, a classmate who is less inclined to be aggressive may select this individual as a friend based on the similar levels of aggression displayed by both actors within the peer group or within their interactions with each other. Because the teacher rated the child as aggressive, this may be seen as dissimilarity in the present results. This may not be observed when both the friendships and behaviors are being rated by the same individual. Lastly, the wording of the question used in the child interview may not have adequately assessed friendship within the classroom. The question was phrased as someone with whom the child likes to play. Although this can be an indicator of friendship, it may be addressing a different phenomenon.

Conclusion

The present study reviewed the developmental significance of peer relationships and addressed the need to look at the behavior of individuals with whom children form friendships. The concept of homophily was discussed and previous research addressing the degree of similarity among friends was outlined. As noted earlier, the concept of homophily rarely has been studied in preschool-aged children, a period when children begin to spend an increasing amount of time in the peer group and are free to select the individuals with whom they choose to befriend.

Although the effects of the present study are small, they are important for multiple reasons. First, this research is important given that there is little previous research in this area for preschool-aged children and this is an age at which children learn to navigate the social world and form friendships that may ease the transition to elementary school, thus setting the stage for a child's future academic and social success. Secondly, prior to entering preschool children may be primarily engaged in vertical relationships with their siblings, parents, and other adults. Preschool may be a child's first opportunity to independently handle horizontal peer relationships which will assist in learning the social skills necessary to succeed in the peer domain. It is at this stage that children are learning to navigate the social world through these interactions, thus it is important to better understand the processes that govern friendships and friend selection during the preschool period. Lastly, the present research casts doubt on the common assumption of homophily that birds of a feather flock together and calls for the need to take a more theoretical approach to explain homophily, its developmental progression, why it seems to be the basis of friendships for some individuals and not others, as well as to elucidate which variables individuals should be similar between members of friendship dyads.

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Table 1

Inter-factor correlation coefficients for the factors derived from the exploratory factor analysis

Factor	1	2	3
1. Aggressive Self Expression	--	.52*	-.28*
2. Assertive Self Expression		--	.00
3. Positive Social Skills			--

*$p < .0001$.

Table 2

Correlations among the friendship variables and the outcome variables

Variable	1	2	3	4
1. Social Preference	--	.78***	-.06	.34***
2. Social Appeal		--	-.04	.42***
3. Number of Frds. Identified			--	.34***
4. # Reciprocated Frds.				--
5. # Non-rec. Frds.				
6. Overt Aggression				
7. Relational Aggression				
8. Aggressive Self Expression				
9. Assertive Self Expression				
10. Positive Social Skills				
11. Prosocial Control				
12. Coercive Control				
13. Resource Control				

$n = 272$. *$p < .05$. **$p < .01$. ***$p < .0001$.

Table 2 continued

Correlations among the friendship variables and the outcome variables

Variable	5	6	7	8
1. Social Preference	-.25***	-.11	.04	-.04
2. Social Appeal	-.28***	-.06	.06	-.01
3. Number of Frds. Identified	.86***	.08	.04	.06
4. # Reciprocated Frds.	-.14*	-.04	.07	-.01
5. # Non-rec. Frds.	--	.10	.00	.06
6. Overt Aggression		--	.61***	.82***
7. Relational Aggression			--	.78***
8. Aggressive Self Expression				--
9. Assertive Self Expression				
10. Positive Social Skills				
11. Prosocial Control				
12. Coercive Control				
13. Resource Control				

$n = 272$. *$p < .05$. **$p < .01$. ***$p < .0001$.

Table 2 continued

Correlations among the friendship variables and the outcome variables

Variable	9	10	11	12	13
1. Social Preference	.04	.33***	.22**	.06	.22***
2. Social Appeal	.12*	.29***	.20**	.08	.20***
3. Number of Frds. Identified	.02	.01	.00	.01	.00
4. # Reciprocated Frds.	.02	.17**	.10	.01	.10
5. # Non-rec. Frds.	-.01	-.10	-.06	-.01	-.08
6. Overt Aggression	.51***	-.48***	.35***	.80***	.45***
7. Relational Aggression	.48***	-.21**	.52***	.67***	.50***
8. Aggressive Self Expression	.52***	-.28***	.46***	.78***	.51***
9. Assertive Self Expression	--	.00	.55***	.62***	.64***
10. Positive Social Skills		--	.20**	-.24***	.17**
11. Prosocial Control			--	.58	.69***
12. Coercive Control				--	.70***
13. Resource Control					--

$n = 272$. *$p < .05$. **$p < .01$. ***$p < .0001$.

Table 3

Correlations among the friendship variables and the outcome variables by gender

Variable	1	2	3	4
1. Social Preference	--	.80***	-.01	.26**
2. Social Appeal	.74***	--	.02	.43***
3. Number of Frds. Identified	-.09	-.10	--	.25**
4. # Reciprocated Frds.	.40***	.40***	.41***	--
5. # Non-rec. Frds.	-.31***	-.33***	.86***	-.08
6. Overt Aggression	-.19*	-.15	.05	-.13
7. Relational Aggression	-.02	-.03	.05	.01
8. Aggressive Self Expression	-.12	-.11	.00	-.09
9. Assertive Self Expression	.00	.07	-.06	-.05
10. Positive Social Skills	.34***	.28**	-.01	.20*
11. Prosocial Control	.13	.05	-.04	-.01
12. Coercive Control	-.06	-.06	-.04	-.09
13. Resource Control	.14	.06	-.14	-.05

Note. Correlations for boys (n = 128) are presented above the diagonal and correlations for girls (n = 144) are presented below the diagonal.

*p < .05. **p < .01. *** p < .0001.

Table 3 continued

Correlations among the friendship variables and the outcome variables by gender

Variable	5	6	7	8
1. Social Preference	-.16	.00	.06	.01
2. Social Appeal	-.21*	.06	.13	.07
3. Number of Frds. Identified	.87***	.10	.08	.16
4. # Reciprocated Frds.	-.22**	.06	.13	.09
5. # Non-rec. Frds.	--	.08	-.02	.12
6. Overt Aggression	.12	--	.55***	.54***
7. Relational Aggression	.03	.71***	--	.75***
8. Aggressive Self Expression	.02	.85***	.80***	--
9. Assertive Self Expression	-.07	.53***	.54***	.55***
10. Positive Social Skills	-.13	-.47***	-.24**	-.35***
11. Prosocial Control	-.06	.36***	.58***	.45***
12. Coercive Control	-.03	.82***	.73***	.80***
13. Resource Control	-.15	.47***	.57***	.53***

Note. Correlations for boys (n = 128) are presented above the diagonal and correlations for girls (n = 144) are presented below the diagonal.

*p < .05. **p < .01. *** p < .0001.

Table 3 continued

Correlations among the friendship variables and the outcome variables by gender

Variable	9	10	11	12	13
1. Social Preference	.07	.28**	.30**	.17*	.32**
2. Social Appeal	.17	.26**	.36***	.20*	.35***
3. Number of Frds. Identified	.12	.04	.05	.08	.18*
4. # Reciprocated Frds.	.09	.11	.33**	.13	.30**
5. # Non-rec. Frds.	.07	-.05	-.05	.01	.02
6. Overt Aggression	.50***	-.47***	.38***	.82***	.44***
7. Relational Aggression	.40***	-.28**	.41***	.57***	.42***
8. Aggressive Self Expression	.49***	-.30***	.45***	.74***	.49***
9. Assertive Self Expression	--	-.04	.50***	.59***	.59***
10. Positive Social Skills	.02	--	.20**	-.26**	.15
11. Prosocial Control	.58***	.16	--	.59***	.67***
12. Coercive Control	.65***	-.28**	.57***	--	.70***
13. Resource Control	.68***	.19*	.70***	.70***	--

Note. Correlations for boys (n = 128) are presented above the diagonal and correlations for girls (n = 144) are presented below the diagonal.

*p < .05. **p < .01. *** p < .0001.

Table 4

Intraclass correlations examining homophily among the variables of interest in reciprocated friendships

Variable	Both Genders (n = 134)	Boys (n = 59)	Girls (n = 75)
Social Preference	.29***	.33**	.07
Social Appeal	-.01	.13	-.17†
Number of Friends Identified	.18*	-.04	.05
Number of Reciprocated Friendships	.06	.14	.01
Number of Non-reciprocated Friendships	.07	.08	.06

Note. Values represent the intraclass correlation among the variable of interest between Friend 1 and Friend 2 (e.g., social appeal of Friend 1 correlated with social appeal of Friend 2). There were a total of 134 (boys = 59, girls = 75) unique reciprocated friendship dyads. All dyads were double entered (Griffin and Gonzalez, 1995).

†$p < .17$. *$p < .05$. **$p < .01$. ***$p < .0001$.

Table 4 continued

Intraclass correlations examining homophily among the variables of interest in reciprocated friendships

Variable	Both Genders (*n = 134)*	Boys (*n* = 59)	Girls (*n* = 75)
Overt Aggression	.06	-.11	.16†
Relational Aggression	.12†	.00	.16†
Aggressive Self Expression	.02	.05	-.02
Assertive Self Expression	.11	.08	.11
Positive Social Skills	.18*	.15	-.03
Prosocial Resource Control	.12†	-.01	.00
Coercive Resource Control	.11	-.02	.24*
Resource Control	.13†	.06	.15†

Note. Values represent the intraclass correlation among the variable of interest between Friend 1 and Friend 2 (e.g., social appeal of Friend 1 correlated with social appeal of Friend 2). There were a total of 134 (boys = 59, girls = 75) unique reciprocated friendship dyads. All dyads were double entered (Griffin and Gonzalez, 1995).

†$p < .17$. *$p < .05$. **$p < .01$. ***$p < .0001$.

Table 5

Intraclass correlations examining homophily among the variables of interest in non-reciprocated friends

Variable	Both Genders (n = 349)	Boys (n = 153)	Girls (n = 196)
Social Preference	.09†	.15*	.02
Social Appeal	.05	.17*	-.06
Number of Friends Identified	.14**	.06	.02
Number of Reciprocated Friendships	.15**	.25**	.07
Number of Non-reciprocated Friendships	.06	.03	.08

Note. Values represent the intraclass correlation among the variable of interest between Friend 1 and Friend 2 (e.g., social appeal of Friend 1 correlated with social appeal of Friend 2).There were a total of 349 (boys = 153, girls = 196) unique reciprocated friendship dyads. All dyads were double entered and the correlation was obtained controlling for whether or not the individual gave or received the nomination (Griffin and Gonzalez, 1999).

†$p < .10$. *$p < .05$. **$p < .01$.

Table 5 continued

Intraclass correlations examining homophily among the variables of interest in non-reciprocated friends

Variable	Both Genders (n = 349)	Boys (n = 153)	Girls (n = 196)
Overt Aggression	-.06	-.14†	.01
Relational Aggression	-.03	-.03	-.09
Aggressive Self Expression	.02	-.09	-.07
Assertive Self Expression	-.03	-.03	-.03
Positive Social Skills	.02	.01	-.02
Prosocial Resource Control	-.03	-.03	-.04
Coercive Resource Control	-.02	-.16*	-.02
Resource Control	-.07	-.01	-.02

Note. Values represent the intraclass correlation among the variable of interest between Friend 1 and Friend 2 (e.g., social appeal of Friend 1 correlated with social appeal of Friend 2).There were a total of 349 (boys = 153, girls = 196) unique reciprocated friendship dyads. All dyads were double entered and the correlation was obtained controlling for whether or not the individual gave or received the nomination (Griffin and Gonzalez, 1999).

†$p < .10$. *$p < .05$. **$p < .01$.

Table 6

Standardized means and standard errors for person centered analyses

Variable	Standardized Mean					Standard Error				
	BC	PC	CC	TC	NC	BC	PC	CC	TC	NC
Resource Control*** (teacher rated)	.81	.24	.27	-.23	-.74	.07	.09	.09	.06	.07
Social Preference** (peer rated)	.44	.44	-.40	-.03	-.42	.20	.25	.26	.16	.19
Peer Acceptance*** (teacher rated)	.46	.69	-.34	-.08	-.46	.15	.25	.22	.13	.15
Peer Leader** (teacher rated)	.45	-.17	.08	-.16	-.22	.15	.25	.22	.13	.15
Friendship Nominations Received**	.34	.23	-.31	-.05	-.18	.13	.16	.16	.10	.12

Note. BC = Bistrategic Controller (n = 57), PC = Prosocial Controller (n = 36), CC = Coercive Controller (n = 34), TC = Typical Controller (n = 85), NC = Noncontroller (n = 60).

*p < .05. **p < .01. ***p < .0001.

Table 7

Resource control subtype classifications of children and their reciprocated friends

Targets' Resource Control Subtypes	Friends' Resource Control Subtypes					
$n_{\text{reciprocated friendships}} = 268$						
	BC	PC	CC	TC	NC	TOTAL
Bistrategic Controllers	20	8	4	25	11	68
Prosocial Controllers		4	4	11	7	34
Coercive Controllers			0	6	8	22
Typical Controllers				26	17	85
Non-Controllers					16	59
					$\chi^2_{(16)} = 13.01, p = .67$	

Table 8

Resource control subtype classifications of boys and their reciprocated friends

Targets' Resource Control Subtypes	Friends' Resource Control Subtypes					
Boys ($n_{\text{reciprocated friendships}} = 118$)						
	BC	PC	CC	TC	NC	TOTAL
Bistrategic Controllers	6	2	3	11	7	29
Prosocial Controllers		0	0	3	2	7
Coercive Controllers			0	3	7	13
Typical Controllers				8	10	35
Non-Controllers					8	34
					$\chi^2_{(16)} = 13.19$, $p = .65$	

Table 9

Resource control subtype classifications of girls and their reciprocated friends

Targets' Resource Control Subtypes	Friends' Resource Control Subtypes					
Girls ($n_{\text{reciprocated friendships}} = 150$)						
	BC	PC	CC	TC	NC	TOTAL
Bistrategic Controllers	14	6	1	14	4	39
Prosocial Controllers		4	4	8	5	27
Coercive Controllers			0	3	1	9
Typical Controllers				18	7	50
Non-Controllers					8	25
					$\chi^2_{(16)} = 17.79$, $p = .34$	

Table 10

Resource control subtype classifications of children and their non-reciprocated friends

Targets' Resource Control Subtypes	Friends' Resource Control Subtypes					
$n_{\text{non-reciprocated friendships}} = 349$						
	BC	PC	CC	TC	NC	TOTAL
Bistrategic Controllers	12	11	7	19	8	57
Prosocial Controllers	9	9	9	18	4	49
Coercive Controllers	13	8	5	14	13	53
Typical Controllers	38	13	11	28	23	113
Non-Controllers	22	15	6	21	13	77
					$\chi^2_{(16)} = 17.43$, $p = .36$	

Table 11

Resource control subtype classifications of boys and their non-reciprocated friends

Targets' Resource Control Subtypes	Friends' Resource Control Subtypes					
Boys ($n_{\text{non-reciprocated friendships}} = 153$)						
	BC	PC	CC	TC	NC	TOTAL
Bistrategic Controllers	3	3	1	8	4	19
Prosocial Controllers	3	1	1	3	0	8
Coercive Controllers	6	2	1	7	8	24
Typical Controllers	13	4	6	19	12	54
Non-Controllers	14	7	4	13	10	48
					$\chi^2_{(16)} = 7.68$, $p = .96$	

Table 12

Resource control subtype classifications of girls and their non-reciprocated friends

Targets' Resource Control Subtypes	Friends' Resource Control Subtypes					
Girls ($n_{\text{non-reciprocated friendships}} = 196$)						
	BC	PC	CC	TC	NC	TOTAL
Bistrategic Controllers	9	8	6	11	4	38
Prosocial Controllers	6	8	8	15	4	41
Coercive Controllers	7	6	4	7	5	29
Typical Controllers	25	9	5	9	11	59
Non-Controllers	8	8	2	8	3	29
					$\chi^2_{(16)} = 19.23$, $p = .26$	

Appendix A

Teacher Questionnaire: Aggression

Overt Aggression (α = .95)

Variable Name	Item # TQ	Item
TiOAdip1	28	S/he is the kind of person who fights with others.
TiOAdip2	83	S/he is the kind of person who pushes, kicks, or punches others.
TiOAdip3	64	S/he is the kind of person who says mean things to others.
TiOAins1	29	S/he starts fights to get what s/he wants.
TiOAins2	95	S/he threatens others to get what s/he wants.
TiOAins3	52	S/he pushes, kicks, or punches others to get what s/he wants.
TiOArea1	55	S/he fights back when hurt by someone.
TiOArea2	30	S/he threatens back when threatened by someone.
TiOArea3	2	S/he gets back at others by saying mean things to them when s/he feels hurt by them.

Appendix A continued

Teacher Questionnaire: Aggression

Relational Aggression (α = .93)

Variable Name	Item # TQ	Item
TiRAdip3	31	S/he is the kind of person who keeps others from being in his/her group of friends.
TiRAdip1	53	S/he is the kind of person who ignores others or stops talking to them.
TiRAdip2	94	S/he is the kind of person who gossips, spreads rumors, tattles, or fibs/exaggerates about others
TiRAins1	32	S/he tells his/her friends to stop liking someone to get what s/he wants.
TiRAins2	4	S/he says mean things about others to his/her friends to get what s/he wants.
TiRAins3	67	S/he keeps others from being in his/her group of friends to get what s/he wants.
TiRArea2	54	S/he says mean things about others if they have threatened her/him.
TiRArea3	91	S/he keeps others from being in his/her group of friends if they have hurt him/her.
TiRArea4	33	S/he tells others s/he won't be his/her friend anymore when s/he is angry at them.

Appendix B

Teacher Questionnaire: Exploratory Factor Analysis

CONSTRUCTS LOADING ON AGGRESSIVE SELF EXPRESSION (α = .83)

Emotional Manipulation in a Negative Way (α = .63)

Variable Name	Item # TQ	Item
TEMOMAN1	46	S/he can act sad or angry, even when s/he is not.
TEMOMAN2	56	S/he can influence others by acting sad, disappointed, or angry.
TEMOMAN3	9	S/he can use his/her emotions to get what s/he wants.

Overt and Relational Aggression (α = .96)

Variable Name	Item # TQ	Item
TiOAdip1	28	S/he is the kind of person who fights with others.
TiOAdip2	83	S/he is the kind of person who pushes, kicks, or punches others.
TiOAdip3	64	S/he is the kind of person who says mean things to others.
TiOAins1	29	S/he starts fights to get what s/he wants.
TiOAins2	95	S/he threatens others to get what s/he wants.
TiOAins3	52	S/he pushes, kicks, or punches others to get what s/he wants.
TiOArea1	55	S/he fights back when hurt by someone.
TiOArea2	30	S/he threatens back when threatened by someone.
TiOArea3	2	S/he gets back at others by saying mean things to them when s/he feels hurt by them.
TiRAdip3	31	S/he is the kind of person who keeps others from being in his/her group of friends.
TiRAdip1	53	S/he is the kind of person who ignores others or stops talking to them.

TiRAdip2	94	S/he is the kind of person who gossips, spreads rumors, tattles, or fibs/exaggerates about others.
TiRAins1	32	S/he tells his/her friends to stop liking someone to get what s/he wants.
TiRAins2	4	S/he says mean things about others to his/her friends to get what s/he wants.
TiRAins3	67	S/he keeps others from being in his/her group of friends to get what s/he wants.
TiRArea2	54	S/he says mean things about others if they have threatened her/him.
TiRArea3	91	S/he keeps others from being in his/her group of friends if they have hurt him/her.
TiRArea4	33	S/he tells others s/he won't be his/her friend anymore when s/he is angry at them.

Two Teacher Sociometric Items also loaded on the factor of Aggressive Self Expression

1. *"Who tends to quarrel with other children?"*

1.
2.
3.

2. *"Is there a classroom bully?"*

1.
2.
3.

Appendix B continued

Teacher Questionnaire: Exploratory Factor Analysis

CONSTRUCTS LOADING ON ASSERTIVE SELF EXPRESSION (α = .83)

Extraversion (α = .89)

Variable Name	Item # TQ	Item
TiEXTRA1	84	S/he is reserved/introverted.
TiEXTRA2	21	S/he is shy/withdrawn.
TiEXTRA6	59	S/he is extroverted/energetic.

Openness to Experience (α = .71)

Variable Name	Item # TQ	Item
TiOPEN4	87	S/he is creative/curious.
TiOPEN5	60	S/he is imaginative/inventive.
TiOPEN6	22	S/he is open to experience/adventurous.

Neuroticism (reverse coded for exploratory factor analysis) (α = .59)

Variable Name	Item # TQ	Item
TiNEURO1	20	S/he is fearful/nervous.
TiNEURO4	77	S/he is secure/confident.
TiNEURO6	58	S/he is calm/composed.

Appendix B continued

Teacher Questionnaire: Exploratory Factor Analysis

CONSTRUCTS LOADING ON POSITIVE SOCIAL SKILLS (α = .83)

Agreeableness (α = .77)

Variable Name	Item # TQ	Item
TiAGREE4	23	S/he is kind/agreeable.
TiAGREE6	6	S/he is understanding/forgiving.
TiAGREE6	96	S/he is generous/giving.

Conscientiousness (α = .80)

Variable Name	Item #TQ	Item
TiCONT2	85	S/he is disorderly/cluttered.
TiCONT4	61	S/he is thorough/planful.
TiCONT5	24	S/he is responsible/dutiful.
TiCONT6	5	S/he is conscientious/hard-working.

Emotional Manipulation in a Positive Way (α = .68)

Variable Name	Item #TQ	Item
TEMOMAN4	92	S/he knows how to make someone smile.
TEMOMAN5	37	S/he can use his/her emotions to make someone happy.
TEMOMAN6	74	S/he knows how to give a compliment.

Attention to Social Cues (α = .77)

Variable Name	Item # TQ	Item
TN_CUE1	65	S/he can tell when someone is upset.
TN_ CUE3	90	S/he can tell when someone feels bad.
TP_ CUE1	34	S/he can tell when someone feels good.

Hyperactivity (reverse coded for the exploratory factor analysis) (α = .71)

Variable Name	Item # TQ	Item
TiHa1	89	S/he has difficulty sitting still during lessons, fidgets uneasily in his/her seat, and may also be talkative and noisy.
TiHa2	39	S/he has difficulty concentrating on schoolwork/ activities, is often occupied with irrelevant things, or sits daydreaming.

Appendix C

Teacher Questionnaire: Resource Control

Prosocial Resource Control (α = .69)

Variable Name	Item # TQ	Item
TInfpos1	17	S/he is someone whose plans are usually liked by others and followed by them.
TInfpos2	88	S/he gets what s/he wants by 'helping' others (even if they don't really need it).
TInfpos3	25	S/he promises friendship (ex: "I'll be your best friend if…') to get what s/he wants.
TInfpos4	73	S/he gets what s/he wants by promising an invitation (ex: 'You can come to my house/birthday party', etc).
TInfpos5	47	S/he promises to do something in to get what s/he wants return (ex: sharing, reciprocating, turn-taking).
TInfpos6	1	S/he gets what s/he wants by being really nice about it.

Coercive Resource Control (α = .92)

Variable Name	Item # TQ	Item
TInfNeg1	49	S/he is someone who gets others to do what s/he tells them to do, even if they don't really want to.
TInfNeg2	62	S/he makes others follow his/her plans to gets what s/he wants.
TInfNeg3	86	S/he gets what s/he wants by bullying others.
TInfNeg4	8	S/he tricks others to get what s/he wants.
TInfNeg5	26	S/he gets what s/he wants by forcing others.
TInfNeg6	79	S/he gets what s/he wants by making verbal threats or threats of aggression.

Resource Control (α = .89)

Variable Name	Item # TQ	Item
TResCon1	81	S/he usually gets first access to preferred toys when with peers.
TResCon2	27	S/he usually gets what s/he wants when with peers.
TResCon3	93	S/he usually gets the best roles in games when with peers.
TResCon4	63	S/he usually is the center of attention when with peers.
TResCon5	48	S/he usually plays with the favored toys when with peers.
TResCon6	3	S/he seems to win out over peers.

Appendix D

Child Interview: Sociometric Procedure

1. *"Who do you like to play with the most?"*

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

2. *"Who don't you like to play with?"*

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.