

PEER INFLUENCE IN EARLY ADOLESCENTS' POPULARITY GOAL

A Dissertation
Submitted to
Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF PHILOSOPHY
PSYCHOLOGY

by
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May 2014

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ABSTRACT

Peer Influence on Early Adolescents' Popularity Goal

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Doctor of Philosophy

Temple University, 2014

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The goal of this study was to examine influence of peers on the popularity goal of early adolescents. Research has demonstrated that there is increased preoccupation with popularity status during early adolescence, but there is little research on what influences youths' actual goal for popularity status (Adler & Adler, 1998). To address this gap in the literature, this research investigated two types of peer influences on adolescents' popularity goal over time: peer group norms and perceived peer norms. Youth are assumed to be influenced by the norms set by their peer groups and by their perceptions of the peer norms for popularity. However, individuals are also assumed to be differentially open to such influence. Therefore, I considered potential moderators for both types of peer influence. Two moderators were explored for the influence of peer group norm on early adolescents' popularity goal over time: the group's popularity status and an individual's own status within the group. For the influence of perceived peer norms on early adolescents' popularity goal over time, I considered an interaction with the peer group's norm for popularity goal.

Given the nested nature of the data, with adolescents within peer groups, this study employed Hierarchical Linear Modeling (HLM) analyses to model the effects of peer groups on individuals over time. A total of 232 adolescents in 57 peer groups were included in the study. A series of models were analyzed to test for the influence of peer

group norms on adolescents' popularity goal over time. First, the main effect of peer group norm on adolescents' popularity goal was tested. Results demonstrate that the higher the peer group norm, the higher adolescents' popularity goal at Time 2, after controlling for their popularity goal at Time 1. Second, the two-way interaction between peer group norm and groups' popularity status on adolescents' popularity goal was tested. Results indicate that the association between peer group norms and adolescents' popularity goal was significantly moderated by the popularity status of the group. A higher peer group norm was associated with higher popularity goal over time when adolescents were in low popular groups. The association between peer group norm and popularity goal remained relatively stable for those adolescents in high popular groups. Third, I tested the three-way interaction between peer group norms, groups' popularity status, and individual members' status within the group on adolescents' popularity goal over time. Results indicate that the strength of the association between group norm and adolescents' popularity goal was stronger for low status individuals than high status individuals in high popular groups. For those high status individuals, a negative association was found. There was also a positive association between group norm and popularity goal for both low and high status individuals in low popular group with overall higher levels of popularity goal (Time 2) for the low status individuals than for the high status ones in these groups.

This study also analyzed models to test for the influence of perceived peer group norms for popularity on adolescents' popularity goal over time. Results indicate there is a positive association between perceived peer norms for popularity and adolescents'

popularity goal over time, even after controlling for the influence of peer group norms.

There was no significant interaction of perceived peer norms and peer group norms on the adolescents' popularity goal over time. Together, results provide evidence that youths' popularity goal may be influenced by the norms established in their peer group, their groups' popularity status as indicated by the nuclear members' popularity levels, their own status within the group, and their perception of peer norms in the networks.

Results suggest that both individual and peer group factors contribute to youths' openness to peer influence and that such factors should be considered when investigating how peers may influence youths' social goals.

DEDICATION

I dedicate this dissertation to my parents, Erin and Peter Dawes, for insisting that my number one job growing up was to be a good student. Thank you for encouraging my intellectual pursuits and for your continuous guidance throughout my many years of school. I would not be who I am today without your love and support.

I also dedicate this dissertation to my husband, Tom Horton. Your constant support and encouragement helped see me through graduate school. Thanks for bringing me tea when I worked late. Thanks for taking care of the house when I worked toward a deadline. Thanks for being my soundboard for ideas. Thanks for sharing your love of learning. Thanks for following me and my career. And most importantly, thank you for your love.

ACKNOWLEDGEMENTS

I extend my sincere appreciation to several individuals who have supported me throughout the dissertation process and graduate school. First, I would like to thank all of the developmental faculty members at Temple University for several years of rewarding and thought-provoking courses. Graduate school would not have been the same without the camaraderie and support from my fellow graduate students, especially my fellow lab member, Tabitha Wurster. I extend my gratitude to Deborah Drabick, Peter Marshall, and Kathy Hirsh-Pasek for taking the time to participate on my dissertation committee. I also would like to acknowledge the tremendous guidance of both Larry Steinberg and Marsha Weinraub throughout the preliminary examination, the dissertation proposal, and the dissertation itself. I have learned a great deal from their insights and thank them for their thoughtful feedback and helpful discussions.

This dissertation would not have been possible without the support from the National Science Foundation (NSF 0339070) and the William T. Grant Foundation (Grant ID 6934) awards granted to Hongling Xie, Ph.D. I am grateful to all the project administrators and research assistants for the Transition to Middle School Project and to the wonderful undergraduates who have assisted in the lab over the years. I am also extremely thankful to the school administrators, teachers, and students who participated in the study. Without their participation, this project would not have been possible.

Lastly, I offer my heartfelt thanks and appreciation to my advisor, Hongling Xie. I could not have been more fortunate than to work with Hongling and have the benefit of

her mentorship throughout my graduate career. She has made me a better scientist and has helped me grow both professionally and personally. Her tremendous support throughout the years has been invaluable to me.

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CHAPTER 1

INTRODUCTION

Which goals adolescents pursue and how those goals shape long-term development has become a topic of increasing interest in recent decades. It is during the adolescent time period that youth experience multiple changes, challenges, and demands (Nurmi, 1993); how youth navigate those challenges may have far-reaching consequences on their later development and psychological well-being. With such gravity in mind, researchers have been increasingly interested in understanding the goals adolescents pursue; in particular, what *social* goals adolescents pursue. There is a wealth of research on social behaviors (i.e., aggression, bullying) given their implications for individual psychosocial health and societal functioning (e.g., Brown & Taylor, 2008; McDonald & Lochman, 2012; Sourander, Ronning, Brunstein-Klomek, Gyllenberg, Kumpulainen, Niemela, et al., 2009; Underwood, Beron, & Rosen, 2011; Wolke, Copeland, Angold, & Costello, 2013). Increasingly, attention has been paid to understanding what social goals adolescents strive for and how they form social goals (e.g., Mansfield & Wosnitza, 2010; Massey, Gebhardt, & Garnefski, 2008, 2009; Nelson & DeBacker, 2008; Nurmi, 1991, 1993; Ojanen, Gronroos, & Salmivalli, 2005; Ryan & Shim, 2006, 2008). Despite acknowledgement of the importance of studying adolescents' social goals, the majority of research has focused on the association between goals and behaviors. However, if we are to change the social goals driving social behaviors associated with negative outcomes, we must first understand what factors influence an adolescent's social goals. To address this gap in the literature, this study examined the

influence of peer group members on early adolescents' specific social goal for popularity status.

This introduction is divided into four major sections. In the first section, I present theory and research on goals in general, reviewing the definition of a social goal and describing the types of social goals endorsed by adolescents. This section will also discuss the topic of focus for this study: popularity goal. The second major section presents a developmental perspective on the importance of popularity goal for early adolescents through a review of three major changes that occur during early adolescence: changes in interpersonal needs, changes in the peer environment, and changes in the school environment. The third section describes two relevant theories of peer influence, social interaction theory and social comparison theory, and presents the two types of peer influence under investigation; namely, peer group norms for popularity goal and perceptions of the popularity peer norm. Building from the discussion of peer influence theories and types of peer influence, in the fourth and final section I present my hypotheses regarding the influence of peers on early adolescents' goal for popularity status over time.

Conceptual Review of Adolescent Social Goals

Goals are defined as “internal representations of desired states, where states are broadly constructed as outcomes, events or processes” (Austin & Vancouver, 1996, p. 338). Goals help give meaning to individuals lives (Baumeister, 1989; Emmons, 1986) and help shape the course of development (Brandtstädter, 1989) through effects on cognitive activity and later behavior (Gollwitzer & Moskowitz, 1996; Kruglanski, 1996).

The basic process of goal setting and goal pursuit are captured in a feedback loop model consisting of *input function*, a *reference value*, a *comparator*, and an *output function*. The input function is what brings information in to the organism (i.e., perception). The reference value is the specific goal in mind. The comparator contrasts the input and reference values to detect differences between them, yielding the comparison of “no difference” or “discrepancy.” Finally, the output value of the feedback loop may be thought of as behavior used to reduce any discrepancy found between the input and the reference value (Carver & Scheier, 1998). The individual seeks to reduce any gap between the states through affective and cognitive regulation of their behavior (Ford, 1992).

This basic model (Carver & Scheier, 1998) and a more recently proposed model (Dawes & Xie, in prep) distinguish between two major components: goal setting and goal pursuit (Austin & Vancouver, 1996; Ford, 1992; Massey et al., 2008, 2009). More attention has been paid to the goal pursuit component, with numerous studies examining how goals direct behaviors (Austin & Vancouver, 1996; Bandura, 2001; Crick & Dodge, 1994; Nicholls, 1984, Urdan & Maehr, 1995), particularly in the achievement and organizational contexts (e.g., Eccles, 1987, 2005; Locke & Latham, 2002; Wigfield & Eccles, 1992). In contrast, few theories grapple with how individuals are able to set goals or where goals come from (Bargh, 1990; Carver & Scheier, 1999; Karoly, 1993; Oettingen, Pak, & Schnetter, 2001). According to a model proposed by Dawes and Xie (in prep), goal setting is influenced directly by both social and individual factors. Their model also considers how social factors may influence goal setting indirectly through

effects on individuals, thus acknowledging the nested nature of individual development within social context (Dawes and Xie, in prep). Because more work is needed to understand how social factors may influence individual development, this dissertation investigates specific forms of influence on a specific goal using a longitudinal design. Though personal goals may be social or nonsocial in nature, this study focuses on a specific social goal (e.g., Marttinen & Salmela-Aro, 2012; Massey et al., 2008, Nurmi, 1991, 1993).

Social goals are defined as the types of social outcomes individuals want to avoid or achieve (Jarvinen & Nicholls, 1996; Miller & Read, 1991). Why individuals pursue social goals may be explained by several theories: Resource Control Theory (Hawley, 1999), Self-Determination Theory (e.g., Deci & Ryan, 2000), and Agentic/Communal Theory (e.g., Locke, 2003). According to Resource Control Theory (Hawley, 1999), there are social benefits and social resources (e.g., attention or materials) that individuals want to access (Hawley, 2003; Hawley, Card, & Little, 2008). However, the finite number of social resources creates a natural hierarchy of individuals; those who are able to acquire those resources and those who are not. One way to acquire such resources is to set a goal associated with those resources. Thus, individuals pursue social goals in order to achieve social rewards. According to Self-Determination Theory, social goal pursuit is thought to help humans achieve satisfaction of innate psychological needs (Deci & Ryan, 1980, 1985, 1991, 2000). Satisfaction of needs (e.g., relatedness) is assumed to be related to positive psychological outcomes, helping humans achieve health, vitality and optimal functioning (Deci & Ryan, 2000). For example, it is suggested that the need for affiliation

or the need for relatedness would likely direct individuals to set communal goals that deal with establishing or maintaining social relationships (Deci & Ryan, 2000; McClelland, 1985). According to Agentic/Communal theory, humans are assumed to have two major motives in social interactions: motives for gaining agency and motives related to communality (Bakan, 1966; Buhrmester, 1996; Locke, 2000, 2003). Generally, agency refers to the individual as separate from others which manifests as self-promotion, mastery and self-assertion (Bakan, 1966, Wiggins, 1991). An individual with an agentic goal is focused on gaining status, influence or power in peer relationships. In contrast, communal goals involve the individual's desire to attain and maintain positive relationships with such motives as intimacy, solidarity, connection and cooperation with others (Bakan, 1966, Wiggins, 1991).

Many of the social goals studied today stem from basic assumptions set forth in these theories; namely, that individuals have the desire for certain resources, the desire to fulfill psychological needs, or the motive to gain agency or express communality. Within the adolescent social goal literature, several different types of goals have been studied including: agentic goals, status goals (i.e., popularity goals), communal goals, social affiliation goals (e.g., friendship and romantic relationship goals), social approval goals, social concern goals, social responsibility goals, prosocial goals, social solidarity goals, and social achievement goals (e.g., LaFontana & Cillessen, 2010; Ryan, Hicks, & Midgley, 1997; Ryan & Shim, 2008; Salmivalli et al., 2005; Shim & Ryan, 2012; Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009; Urda & Maehr, 1995).

During adolescence, youth face numerous changes, challenges, demands and transitions (Heckhausen, 1999; Nurmi, 2004). For example, youth experience biological changes (i.e., pubertal development), changes in self-identity, and changes in their social-cognitive capacities which allow for more sophisticated cognitive planning strategies (e.g., Erikson, 1968; Keating, 1980, 2004; Steinberg, 2005; Steinberg & Morris, 2001). Adolescents also experience changes in role transitions and developmental tasks (Elder, 1985; Havighurst, 1974) such as managing mature relationships with peers, planning education, or developing emotional autonomy from parents (Nurmi, 1993). Although it is important to consider the unique changes faced by youth during each period of adolescence (Steinberg & Morris, 2001), changes during the period of early adolescence (ages 11 – 14), are of particular note. During early adolescence, there are changes to interpersonal needs, changes to the peer environment, and changes to the school environment which all interact to create a period of tremendous challenge. How early adolescents navigate these various changes and life demands may have far reaching consequences on their later developmental trajectory.

This study focused on a specific goal often prioritized by early adolescence: the goal for perceived popularity status. To understand why youth might pursue this goal, it is first critical to understand what perceived popularity status is. Within the adolescent peer network, there is a social status hierarchy organized and collectively decided upon by the individuals within that peer network. These measures of status represent the peer group's unilateral judgments of individual peers (Bukowski & Hoza, 1989). The hierarchy may be based on sociometric popularity status or perceived popularity status.

Though there is some overlap between the two types of status and a student can have both sociometric popularity status and perceived popular status, these forms of status are different enough to merit the need for the two distinct constructs (Cillessen & Rose, 2005; LaFontana & Cillessen, 2002; Parkhurst & Hopmeyer, 1998; Rose, Swenson, & Waller, 2004). Both are associated with different behavioral characteristics and outcomes. Sociometric popularity measures the individual's degree of likeability or peers' preference for that individual (Parkhurst & Hopmeyer, 1998). To measure this type of status, peers are typically asked to identify peers they "like the most" (Parkhurst & Hopmeyer, 1998). Given the focus on 'liking,' it is unsurprising that this type of status is often positively correlated with prosocial behaviors such as helpfulness and kindness and negatively correlated with aggressive behaviors.

In contrast, perceived popularity is a type of status indicating social dominance and social prominence (Parkhurst & Hopmeyer, 1998; Rodkin, Farmer, Pearl & van Acker, 2000). The greater visibility and prominent central position that these perceived popular youth have in the peer network contribute to higher social prestige and social power (Fiske, 1993) which allows them access to desirable resources including peer attention and peer support (Hawley, 1999). Typically, peers identify perceived popular youth with the item "this person is popular" which allows the adolescents themselves to define the qualities and characteristics they associate with popularity status. This measure of status is positively correlated with aggressive behaviors, both social and physical, and bullying (Cillessen & Mayeux, 2004; Farmer & Rodkin, 1996; LaFontana & Cillessen, 2002; Lease, Kennedy, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998; Rose et al.,

2004; Xie, Swift, Cairns & Cairns, 2002). Perceived popularity is often considered the more controversial type of social status because often these youth are not necessarily well-liked, likely due to their aggressive behaviors (Adler & Adler, 1998; Parkhurst & Hopmeyer, 1998; Cillessen & Rose, 2005).

Having perceived popularity as a goal, therefore, indicates a desire for social dominance, greater social impact, and greater access to finite social resources such as peer support and peer attention. The limited supply of such resources creates a natural hierarchy of individuals; one avenue for climbing that hierarchy may be to pursue popularity status as a goal. A popularity goal is conceptually similar to an agentic goal or a social demonstration-approach goal (Caravita & Cillessen, 2011; Ojanen et al., 2005; Rodkin, Ryan, Jamison, & Wilson, 2012). Agentic goals indicate a focus on gaining status, power, or influence in peer relationships (Bakan, 1966; Wiggins, 1991). A social demonstration-approach goal is defined as the desire to gain social status and positive feedback from others (Ryan & Shim, 2006, 2008). Individuals with this goal focus on demonstrating their competence (Horst, Finney, & Barron, 2007; Ryan & Shim, 2006; Rodkin et al., 2012). Recent studies examining agentic and social demonstration-approach goals found similar positive associations with aggressive behaviors, providing further evidence for the conceptual link between popularity goals, agentic goals, and social demonstration-approach goals (Ojanen, et al., 2005).

One strength of the current study is the examination of a specific social goal: the goal for perceived popular status. Both agentic goals and the social demonstration-approach goal lack this specificity. For example, social goals assessed by an agentic

framework encompass goals related to the desire for respect and admiration as well as the goal to appear self-confident (e.g., Locke, 2003, Ojanen et al., 2005; Sijtsema et al., 2009). Under the umbrella of agentic goals are such goals as: dominance and leadership goals, control goals, superiority goals, status goals and hostile goals (Caravita & Cillessen, 2011; Chung & Asher, 1996; Erdley & Asher, 1996; Ford, 1992; Jarvinen & Nicholls, 1996; Kiefer, & Ryan, 2008; Levy, Kaplan, & Patrick, 2004; Renshaw & Asher, 1983; Rose & Asher, 1999). Similarly, social demonstration-approach goals encompass not only the desire for popularity but also the desire to be liked by other kids, which, as discussed previously, represent distinct dimensions of status related to distinct behaviors (Rodkin et al., 2012; Ryan & Shim, 2008). In order to lend clarity to the examination of peer influence on social goals, it is important to assess specific social goals. The following sections will address why this specific goal for popularity is relevant and salient during the early adolescent developmental period (Dawes & Xie, 2014; Dawes & Xie, under review).

Developmental Perspective of Importance for Popularity Goal

Why would early adolescents pursue a popularity goal? Nurmi (1993) proposed that adolescents set personal goals related to age-graded developmental tasks. Therefore, it is crucial to understand the unique developmental tasks and changes faced by early adolescents during this period. This may include changes in individuals' interpersonal needs, changes in peer experiences, and changes in the school environment.

Changes in Interpersonal Needs.

Sullivan (1953) proposed a developmental theory emphasizing the role of peers in youths' psychological well-being through the fulfillment of emerging interpersonal needs. During the preadolescent years (age 6-9), peers provide sources for comparison and a way for individuals to practice competition and compromise. At this stage, preadolescents are most concerned with peer rejection and social pride. During early adolescent years (ages 9-12), there is a greater need for friendship intimacy. During adolescence (i.e., middle adolescence, ages 12-16), adolescents experience greater needs for sexual intimacy with opposite-sex peers. These interpersonal, psychological needs are assumed to be innate and essential nutrients, rather than acquired yearnings (Deci & Ryan, 2000) and are assumed to be necessary for ideal psychological functioning. When needs are not met, the individual may experience feelings of anxiety (Sullivan, 1953) and may be compelled to reduce any discrepancy between their current state and the state of need fulfillment (Carver & Scheier, 1998). Therefore, it is assumed people set goals in order to achieve need satisfaction (Deci & Ryan, 2000).

This study focused on the early adolescent developmental period when youth's interpersonal needs change to a focus on peer acceptance. Research suggests that early adolescents seek acceptance with peers in order to fulfill the desire for relatedness with others (Juvonen & Cardigan, 2002). These interpersonal needs are likely to influence adolescent cognitive, emotional, and behavioral processes, including goal setting and goal processes (Dawes & Xie, in prep). The interpersonal need for peer acceptance may manifest as concerns for popularity status within the peer group (Parkhurst & Hopmeyer,

1998), leading to the establishment of a popularity goal. Being popular among one's peers represents a form of acceptance by the peer network; thus, it follows that as youth begin to desire greater peer acceptance, they may endorse greater importance for a popularity goal.

Changes in Peer Environment

The changes to youth's peer environment may make them concerned with popularity status, the goal for popularity status, and may make them more susceptible to peer influence. During adolescence, youth spend less time with family members and increasing amounts of time with peers (Csikszentmihalyi & Larson, 1984). Adolescents interact with and spend more time with a wider range of peers, form distinct peer groups, and generate dominance hierarchies (Berndt, 1982; Blyth, Simmons, & Carlton-Ford, 1983; Brown, Dolcini, & Leventhal, 1997; Csikszentmihalyi & Larson, 1984; Estell, Cairns, Farmer, & Cairns, 2005; Farver, 1996; Simmons & Blyth, 1987). Not only is there increased contact with peers, but peers become increasingly important and hold a prominent position in the lives of adolescents (Adler & Adler, 1998; Estell et al., 2005; Higgins & Parsons, 1983; Juvonen & Weiner, 1993). With increased importance of peers and interactions with peers comes the opportunity for the development of autonomy and self-identity (Steinberg, 2002). Such avenues for positive development from peer interactions are coupled with potentially negative consequences such as a greater concern with impression management and social self-presentation (Berndt, 1979; Parker & Gottman, 1989; Ruble & Frey, 1987). As an example, when youth engage in conversations with their peers during the teenage years, they frequently evaluate and

scrutinize the social behaviors of their peers (Gottman & Mettetal, 1986). Such changes to youth's peer experiences suggest that they would be increasingly concerned with their reputation. It follows then, that they would be increasingly concerned with popularity status which is a reputation-based assessment of one's position in the social status hierarchy (Parkhurst & Hopmeyer, 1996).

One of the by-products of increased time spent with and importance of peers is the heightened susceptibility to peer influence during adolescence. Adolescents show heightened susceptibility to peer influence, especially as compared to adults (Gardner & Steinberg, 2005; O'Brien, Albert, Chein, & Steinberg, 2011; Steinberg & Silverberg, 1986). One suggestion is that susceptibility may be caused by a peer "priming" effect in which the short-term benefits of a risky choice (e.g., alcohol use or sexual activity) is favored over the long-term benefits from safer decisions (O'Brien et al., 2011; Steinberg, 2008). Such sensitivity to short-term rewards has been found to be higher in adolescents compared to adults and children (e.g., Chambers, Taylor, & Potenza, 2003; Ernst & Fudge, 2009; Galvan, 2010). Extending to the popularity goal context, youth may pursue a popularity goal in order to achieve the short-term benefits of higher peer regard or peer support. To date, there is no research that has explored the potential individual differences in youth's susceptibility to peer influence on a social goal. Thus, this study fills an important gap in the literature about peer influence and will provide information about how the socialization process may work toward a popularity goal.

Changes in School Environment

In conjunction with changes in the peer landscape are changes in the school environment. A vast majority of youth in the world experience school transitions. Relevant to this study is the transition from elementary school to middle school between the 5th and 6th grades when youth are between the ages of 11 and 13 years old (Hardy, Bukowski, & Sippola, 2002). There are changes to the physical environment such as larger school sizes and different classroom organization (Blyth et al., 1983; Simmons & Blyth, 1987). Middle schools also typically have different instruction practices and management or discipline strategies as well as increased academic competition among students (Eccles & Midgley, 1989; Eccles, Wigfiels, & Schiefele, 1998; Simmons & Blyth, 1987). Youths' experiences with teachers undergo changes following the transition to middle school including: less positive student-teacher relationships; perceptions of less support or caring by teachers; and, a growing mistrust of teachers (e.g., Barber & Olsen, 2004; Eccles & Midgley, 1989; Entwisle, 1990; Midgley, Feldlaufer, & Eccles, 1988). The school day is often structured so that students change classrooms for each course, exposing them to a larger number of peers than they typically encounter during elementary school where they tended to stay with one set of peers and one primary teacher for the majority of the day (Karweit & Hansell, 1983). This exposure to and interaction with a larger network of peer in different classroom contexts may play a role in the extent to which adolescent's endorse popularity status as important.

With so many new peers to the network, there is a need to reshuffle the social status hierarchy (e.g., Pellegrini, 2002). This may contribute to a heightened concern with

peer acceptance in the form of popularity status. Indeed, a recent study found that overall, early adolescent's popularity goal significantly increased during the transition between the 5th and 6th grades, indicating that early adolescent's specific social goal for popularity status is sensitive to changes in the social context (Dawes & Xie, under review).

School transitions and their related changes can have a negative impact on youth's psychological well-being and make ripe the time for the influence of peers (Simmons & Blyth, 1987). According to primary socialization theory (Oetting & Donnermeyer, 1998), an adolescent's peer group may provide stronger socialization effects, particularly when there are weak bonds with the family or school. During the transition to middle school where there is a developmental mismatch in the needs of early adolescents, youth may experience low achievement at school which may contribute to low commitment to school, truancy, and even dropping out (Eccles & Roeser, 2009; Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Maciver, 1993). Having a weak bond with school may then contribute to the heightened influence of peers during this time. It is important to consider that not all youth respond the same to school transitions, just as there are individual differences in the amount of distress that may occur during the transition, so too may there be individual differences in how youth are influenced by their peers during this potentially vulnerable time (Hirsch & DuBois, 1992).

All of these changes that occur during adolescence to interpersonal needs, peer experiences, and the school environment combine to create a growing concern with peer acceptance, in particular, popularity. Indeed, a recent study found that adolescents place significantly more importance on a popularity goal after the transition to middle school

between the 5th and 6th grade (Dawes & Xie, under review). What is still unknown is why exactly this increased importance occurs. In an effort to fill this gap in our understanding of why popularity goal increases in importance following the transition to middle school, this current study investigated how peers may influence youth's popularity goal.

Peer Influence

By its very nature, the goal for popularity involves peer dynamics and as such, it is pertinent to understand how peers influence early adolescents' popularity goal. Peers influence individuals in both negative and positive ways and serve as a reference group that sets values, beliefs, and standards for behavior (Festinger, 1954; Hallinan & Williams, 1990; Steinberg & Morris, 2001). The peer environment is the nested level of influence closest to the individual and may therefore exert influence over goal content (Bronfenbrenner, 1979). Despite the lack of evidence of peer influence on social goals, it is reasonable to expect that peers may influence early adolescents' popularity goal. Tremendous research has established that peers influence adolescents' behaviors (e.g., Allen, Porter, & McFarland, 2006; Barry & Wentzel, 2006; Dishion, McCord, & Poulin, 1999; Gardner & Steinberg, 2005; Prinstein, Boergers, & Spirito, 2001; Shi & Xie, 2012). Using a social cognitive perspective (Bandura, 1989, 2001), if goals are assumed to drive behaviors, then it is likely that peers may be influencing youth's goals which then manifest as behavior changes. To date, no research has investigated this important link between peers and social goals. As such, this study represents an important step in a developing a holistic understanding of how peers may influence early adolescents' cognitive processes.

Peer influence processes may vary depending on the type of peer relationship. This study focused on two specific forms of influence: the influence of peer groups, specifically the peer group's norm, and the influence of perceived peer norms. The mechanisms of influence most pertinent to peer group norms include peer interaction theories, including the processes of interaction synchrony and normative influence. With perceived peer norms, adolescents may be influenced through social comparison processes. Both forms of peer influence and their respective theories will be discussed.

Theories of Peer Influence

Peer Interaction Theories

The peer group, or clique, is a small group of interacting peers who share similar activities and have a degree of influence over one another (Brown, More, & Kinney, 1994; Rubin, Bukowski, Parker, & Bowker, 2008). Frequently interacting with members of the peer group provide the opportunity to self-disclose values or goals and are important for the development of individual behaviors, values and beliefs (Crockett, Losoff, & Peterson, 1984; Kinderman & Gest, 2009; Rubin et al., 2008; Youniss, 1980). From these interactions processes, the group may influence the adolescent through the process of interactional synchrony in which the values or behaviors of individuals are coordinated so that the actions of both are supported by the other (see also social synchrony; Cairns, 1979; Cairns, Neckerman, & Cairns, 1989). Reciprocity is a form of interactional synchrony which may play a role in peer influence on adolescent social goals (Farmer, Xie, Cairns, & Hutchins, 2007). Through reciprocity, the actions of two or more persons support each other and become similar to each other (Farmer et al., 2007).

Thus, adolescents may be compelled to hold similar values or goals as their group mates so that they engage in supportive interactions.

Further, adolescents may be influenced by their peer groups' norms. Each peer group has its own norms which are patterns of accepted attitudes or behaviors (Axelrod, 1986). Individuals may change their perceptions, beliefs, or behaviors in order to be consistent with the group's norms (Forgas & Williams, 2001; Kameda, Takezawa, & Hastie, 2005). Numerous longitudinal studies have demonstrated how group norms influence individual group member's physical and social aggression (Espelage, Holt, & Henkel, 2003; Sijtsema et al., 2010; Shi & Xie, 2012), as well as prosocial behavior (Ellis & Zarbatany, 2007) and school attitudes (Kinderman, 1993; Ryan & Patrick, 2001). Predominantly, research on peer groups has focused on the influence of group norms on behaviors. What is still unknown is whether peer group norms similarly influence an individual member's social goal. It is likely that discussions with peer group members about goals during social interactions may prompt an adolescent to match his/her goal to the level of the group norm. Adolescents may be compelled to coordinate their popularity goal to that of the peer group norm in order to maintain synchronized interactions among group members which are crucial for maintaining the groups' existence (Cairns, 1979; Cairns & Cairns, 1994). Additionally, adolescents may adhere to the group norm because deviations from that norm may lead to negative consequences such as rejection (Kruglanski & Webster, 1991). Taken together, peer group influence, specifically the influence from a peer group's norm, may influence adolescent's popularity goal over time.

Groups have several properties, one of which is the group's hierarchical organization (Rubin et al., 2008). The group's hierarchy is the ordering of individual members within the group along different behavioral or interpersonal dimensions (i.e., aggression). Group members typically vary in social status in the group hierarchy (e.g., Adler & Adler, 1998; Hartup, 1993) with members being either nuclear (i.e., central), secondary or peripheral. Peer group norms are likely set by the nuclear (i.e., central) members of the group (Brown, Bakken, Ameringer, & Mahon, 2008). The nuclear members are suggested to serve as the group prototype and hold the most social power within the group according to Social Identity Perspective (Hogg, 1996a, 2005b). Thus, to study a peer group's norm for popularity goal, it is necessary to assess the nuclear members' popularity goals.

Social Comparison Theory

Social comparison theory assumes that individuals are driven to compare themselves to others in order to evaluate their abilities and opinions (Festinger, 1954). Theorists assumed that individuals engage in social comparison for three reasons: self-evaluation, self-improvement, and self-enhancement (Gibbons & Buunk, 1999; Taylor, Wayment, & Carillo, 1996; Wood, 1989, 1996). Engaging in social comparisons as a way to enhance or improve the self according to peer norms may be way for adolescents to decrease the likelihood of rejection by peers (Festinger, 1954; Kruglanski & Webster, 1991; Rubin et al., 2008). This peer norm may be directly learned through interactions with peers (i.e., vocalization of social goals) or may be perceived by the adolescent (i.e., inferring the social goal behind peers' behaviors, Salmivalli & Peets, 2009). Especially

during adolescence when youth are concerned with gaining peer acceptance and avoiding peer rejection, comparing one's goal to the perceived goals held by peers, may be particularly useful for fitting in (Kruglanski & Webster, 1991; Rubin et al., 2008; Sullivan, 1953). Thus, it is important to consider youth's perception of the peer norm in the broader peer network.

Perceived peer norms are likely to be compelling sources of influence (Fishbein & Ajzen 1975). Social-ecological theory suggests that the individual's perceptions are crucial for understanding how the individual attempts to adapt to his or her social environment (Bronfenbrenner, 1979; Hamilton, 1983,) and an individual's perceptions, either of his or her own self or of his or her peers, are assumed to be related to social goals (Crick & Dodge, 1994). Academic research provides support for theoretical assumptions about the influence of social norms on individual outcomes. Student's perceptions of classroom goals are assumed to influence the adoption of personal goal orientations (Anderman & Maehr, 1994). Indeed, perceived classroom goal orientations which emphasized improvement or mastery of learning material influenced students' academic goals and behaviors (Anderman & Maehr, 1994; Anderman & Young, 1994; Ames & Archer, 1988). Such adoption of perceived goals as personal goals may be explained by social information processing models introduced earlier which assume that individuals interpret social cues and the interpretation of those cues drives further cognitive and behavioral processes (Crick & Dodge, 1994). Building from this evidence, it is responsible to expect that perceived peer norms may guide the importance of a popularity goal.

Specifically, the adolescent may be influenced by perceptions of the popularity peer norm in the larger peer network. According to social comparison theories, if the adolescent compares his/her popularity goal to his/ her perception of popularity importance in the larger peer network and finds a discrepancy, he/she should be compelled to reduce that discrepancy by modifying the importance of his/her popularity goal. Given these considerations, it was predicted that perceived peer norms for popularity importance would be associated with adolescent's popularity goal over time.

Moderating Factors of Peer Influence

The influence of the peer group's norm on individual member's popularity goal may not be uniform. For example, some groups may have a stronger influence on their individual members compared to other groups. Additionally, within the peer group, some group members may be more open to influence compared to other group members. In order to illuminate the differing effects of a peer group norm on early adolescents' popularity goal, this study explored two possible moderating factors: the popularity status of the peer group and the individual's own status within the group.

Research suggests that popularity status may moderate the influence of peer group norms (Ellis & Zarbatany, 2007). Having high popularity in the larger peer network may make nuclear group members (i.e., those members who establish the peer group norm) attractive role models according to social impact theory (Latané, 1981). Models that have more social power are more likely to be imitated than those without such qualities (Bandura, Ross, & Ross, 1963b; Rosenbaum & Tucker, 1962). High popular status connotes social power and prestige (Fiske, 1993), which suggests that nuclear group

members with high popularity status may serve as compelling role models. Indeed, high status individuals are suggested to be the most influential (Cohen & Prinstein, 2006). So in addition to being influential in terms of setting the norm for the group, nuclear members may be even more influential when they have high popularity status. This was found in a study which demonstrated that popular youth contribute to the establishment of classroom norms for bullying behaviors (Dijkstra, Lindenberg, & Veenstra, 2008). Though no study has explored these dynamics for social goals instead of behaviors, it is reasonable to expect similar effects. This leads to the prediction of a two-way interaction between the peer group's norm for popularity goal (as established by the nuclear group members) and the average popularity status (in the broader peer network) of those nuclear members.

It is further suggested that the influence of the peer group norm, in combination with the popularity status of nuclear members, may be dependent on the individual adolescent's position within his or her group. According to social impact theory (Latané, 1981), a low-status adolescent is likely to be heavily influenced by a high-status adolescent. In addition, it is suggested that within a peer group, a low-status individual may be more likely to be open to the influence of high-status individuals in order to maintain his or her group membership (Brown et al., 2008). This was found in a study of peer group influence on social aggression: low-status peripheral group members conformed to the level of social aggression displayed by the high-status nuclear group members more than high-status members did (Shi & Xie, 2012). This suggests that lower-status group members are more likely to be influenced by the peer group norm for

popularity and the popularity status of nuclear members. For instance, if the nuclear members of the group are highly popular and the group has a high popularity goal norm, the popularity goal of peripheral members in the group should increase more than the popularity goal of higher status members in the group.

The influence of perceived peer norms for popularity may be moderated by the group norm. Social learning theory (Bandura, 1971) assumes that what individuals think about the behavior or value being influenced plays a role in the extent to which the individual is reinforced. Those “who are aware of the appropriate responses in a given situation and who value the outcomes they produce change their behavior in the reinforced direction. On the other hand, those who are equally aware of the reinforcement contingencies but who devalue either the required behavior or the reinforcers not only remain uninfluenced but may even respond in an oppositional manner” (Bandura, 1971, p. 4). Those adolescents who perceive the peer norm to be high in popularity concerns may be more heavily influenced by a group that similarly places higher importance on a popularity goal. In contrast, adolescents may be in a group with a high popularity goal, but if those adolescents do not perceive the same emphasis on popularity goal as part of the peer norm, they may not be as heavily influenced by their group. Thus, I expected a two-way interaction between group influence and perceived peer norms on the target adolescent’s popularity goal over time.

Present Study

To test these expectations, this dissertation utilized data from a longitudinal study of early adolescents in the 6th grade at two time points: fall semester (Time 1) and spring

semester (Time 2). This study addressed several limitations in previous research and will contribute to a heightened understanding of the intricacies of peer group influence. First, this study expands the well-established literature on peer influence to include empirical evidence of peers' influence on early adolescent's popularity goal. Thus far, little research has examined whether and how peers can influence an adolescents' social goal. Much research has focused on adolescent social behaviors (i.e., social and physical aggression), and this study continues a line of research examining a social goal found to be related to such social behaviors (e.g., Dawes & Xie, 2013). Additionally, rather than using global assessments of social goal orientations, this study assessed a specific social goal found to be prioritized by adolescents during this time period (LaFontana & Cillessen, 2010). This specificity will engender clarity for future research efforts aimed at investigating the role of social goals in early adolescent's development.

Second, this study also extends our understanding of the type of influence stemming from interactions with one's peer group. As suggested by peer relations researchers (Hinde, 1987, 1995; Rubin, et al., 2008), it is necessary to identify and uniquely study the different types of experiences adolescents have with their peers. During adolescence, the peer group is an important socializing factor in the lives of youth. Research has previously demonstrated how peer groups socialize group member's social and physical aggression (Shi & Xie, 2012). This study extends our understanding of peer group socialization processes by examining the peer group's influence on early adolescent's popularity goal. This study serves as an empirical foundation for future research on how the peer group may influence different types of social and nonsocial

goals. This information may then be used in intervention efforts that harness the power of the peer group to encourage endorsement of prosocial goals and therefore, more prosocial behaviors.

Third, this study considered important moderators to the relationship between the peer group's influence and members' popularity goal, including individual's status within the group and the popularity status of nuclear group members. By considering these moderating influences, this study acknowledges the heterogeneity of adolescents' experiences with their peer groups and recognizes the complexity of peer group influence based on the groups' characteristics and one's own characteristics. Such an approach may help fine-tune expectations for adolescent's susceptibility to peer influence which may then lead to more targeted prevention and intervention strategies.

Lastly, this study continues a recent line of inquiry into the role of perceived popularity peer norms (Dawes & Xie, under review). One's perceptions are assumed to directly impact further cognitive and behavioral processes (e.g., Bandura, 2001; Crick & Dodge, 1994). A recent study by Dawes and Xie (under review) demonstrated that changes in perceptions over time were related to concomitant changes in popularity goal. Youth that perceived high popularity importance in the peer network significantly increased their popularity goal after the transition to middle school compared to youth that perceived low popularity importance (Dawes & Xie, under review). Findings from this current study on the influence of perceived peer norms for popularity in youth's popularity goal may be extended to other research examining the impact of perceived peer norms on a host of other goals and behaviors. For example, this type of research may

be directly applied to interventions aimed at challenging youth's perceptions of their peers' endorsement of risky behaviors which may ultimately lead to reduced engagement of risky behaviors.

Taken together, this study is rooted in both social-cognitive and social-ecological theories (Bandura, 2001; Bronfenbrenner, 1979) through the acknowledgement of the influence of perceptions of norms, the influence of different social contexts (i.e., groups and peer network) on individual development, and the interaction between individual and social factor on development over time.

Hypotheses

Relations among Variables

Expectations for relations among study variables were based on theoretical considerations and empirical findings. I predicted a positive association between popularity goal and individual popularity status as well as group popularity status. This expectation is based on the notion that popularity status is a desired position within the status hierarchy and those already popular who reap the social benefits of such status may desire to maintain that position in order to continue accessing the social benefits. This positive association between popular goal and popularity status was recently found (Dawes & Xie, 2014). Thus, one would expect popularity to be positively related to popularity goal. In line with this reasoning, I expected the group norm for popularity goal to be positively related to group popularity status. I also expected an individual's popularity status in the broader peer network to be related to his or her status within the group. Those who have high social power from high popularity status are more likely to

be nuclear members of the group (Fiske, 1983). Lastly, I expected a positive association between perceived peer norms for popularity and popularity goal (individual and group norm) with the assumption that an individual's perceptions of the popularity peer norm would be used to inform his or her own popularity goal (e.g., Bandura, 1989, 2001; Crick & Dodge, 1994).

Hypothesis 1: Peer Group Influence

Peer group popularity goal norm at Time 1 will be associated with the target adolescent's popularity goal at Time 2, controlling for the adolescent's popularity goal at Time 1. Higher peer group norm of popularity goal at Time 1 will predict greater increases in the target adolescent's popularity goal from Time 1 to Time 2.

Adolescents may coordinate their goal to that of the group norm in order to avoid negative consequences such as rejection or embarrassment (Kruglanski & Webster, 1991; Rubin et al., 2008). The effect of group norms on group members' behaviors has been found for behavioral norms such as aggression and may extend to goal norms (Lease et al., 2002; Shi & Xie, 2012). Thus, I expected a positive association between the groups' norm for popularity goal and early adolescents' popularity goal over time.

Hypothesis 2: Peer Group Influence: Moderated By Popularity Status

The target adolescent's popularity goal at Time 2 will be more strongly associated with the peer group norm set by nuclear members with higher network popularity status at Time 1, after controlling for the target adolescent's popularity goal at Time 1.

Because high popular nuclear members have more social power and are more likely to be imitated, (Bandura et al., 1963b; Fiske, 1993; Rosenbaum & Tucker, 1962) nuclear group members with high popularity status may serve as compelling role models. Thus, high popular nuclear members may be particularly influential to an adolescent's own popularity goal. I expected an interaction effect between group norms for popularity and the popularity status of nuclear members. Specifically, I hypothesize that high group norms for popularity will be associated with greater increases in the target adolescent's popularity goal the more popular the group's nuclear members.

Hypothesis 3: Peer Group Influence: Moderated By Popularity Status and Target Status

The strength of the association between nuclear members popularity goal at Time 1 (i.e., the peer group's norm for popularity goal) and target adolescent's popularity goal at Time 2, after controlling for goal at Time 1, will be stronger the more popular the nuclear member (i.e., higher group popularity) and the lower the target adolescent's status within the group.

This expectation extends my prediction for hypothesis two to include a consideration of differential susceptibility to influence based on individual's own position in the group. Those adolescents with low status in the peer group are suggested to be more open to influence compared to high status members (Latané, 1981). Based on theoretical considerations and empirical findings (Shi & Xie, 2012), I expected that low status individuals in groups with high peer group norm for popularity goal and high popular nuclear members would be influenced more than high status individuals.

Hypothesis 4: Perceptions of Popularity Peer Norms

The target adolescent's popularity goal at Time 2 will be associated with their perceptions of the popularity norms in the broader social network at Time 1, after controlling for his/her popularity goal at Time 1.

According to social comparison theory, individuals compare their own values and beliefs to their perceptions of peers' values; if a discrepancy is found, adolescents are compelled to alter their own values in order to enhance or improve themselves and avoid rejection (Festinger, 1954; Kruglanski & Webster, 1991). Thus, adolescents should adjust their popularity goal over time in order to match their perceptions of popularity peer norm. To date, no research in peer relations literature has directly tested this link between perceived peer norms for popularity and adolescents' popularity goals. However, there is research in the academic literature which supports this expectation. It was shown students' academic goals and behaviors were influenced by perceived classroom goal orientations emphasizing mastery of learning material (Anderman & Maehr, 1994; Anderman & Young, 1994; Ames & Archer, 1988). Based on these theoretical and empirical considerations, I expected perceived peer norms to influence youths' popularity goal over time.

Hypothesis 5: Perceptions of Popularity Peer Norms: Moderated By Peer Group Norm

The strength of the association between perceived peer norms for popularity at Time 1 and target adolescent's popularity goal at Time 2, after controlling for goal at Time 1, will be stronger the higher the peer group norm for popularity goal at Time 1.

This expectation was based on a social learning theory assumption that perceived peer norms will likely contribute to individuals' perceptions of the acceptance of a popularity goal and changes to their perceptions may open them up to greater influence from their peer groups' norm (Bandura, 1971). Thus, those adolescents who perceive higher peer norms for popularity may be more heavily influenced by a peer group that has a high norm for popularity goal. This led to the prediction of a two-way interaction between peer group influence and perceived peer norms on the target adolescent's popularity goal over time.

CHAPTER 2

METHOD

To test these research questions, I utilized 6th grade data from the Transition to Middle School Project (PI: Hongling Xie). This was a three-year longitudinal study examining peer network processing during 5th grade, 6th grade (first year of middle school) and 7th grade. Children were recruited in 2005 from 6 elementary schools in an urban school district outside of Philadelphia, Pennsylvania and followed during the transition to three middle schools in the same school district. A total of 318 5th grade students were initially recruited (51% female, $M_{age} = 11.00$, $SD = 0.44$). Additional participants were recruited in the 6th and 7th grade.

Participants

Participants included a total of 341 6th grade students (54% female, $M_{age} = 12.01$, $SD = .44$) who were recruited as part of a larger three-year longitudinal study from three middle schools in an urban school district in the Northeastern United States. Only participants with signed parental consent were included in the study, resulting in a participation rate of 65% (342/524). The sample was ethnically diverse: 49% were African-American, 33% Caucasian, 17% Hispanic, and 1% Asian or other ethnicity. A higher participant rate was found for girls (73%) than for boys (57%), $\chi^2(1, 524) = 14.26$, $p < .001$. Approximately 61% of participants were eligible for free- or reduced-price lunch at school. Participants and non-participants did not differ in their free-lunch status or ethnic background, $\chi^2s < 8.28$, $ps > .0982$.

Procedure

During the fall and spring semesters of the sixth grade, participants completed questionnaire measures in a group administered survey session conducted by a team of research assistants. Before the session, students were assured of confidentiality and were given a blank paper to cover their survey answers. Students were told they could stop their participation at any time. During the survey session, the lead administrator read the instructions and questions aloud before participants began and asked them not to discuss their answers with other students. Throughout the session, additional research assistants provided monitoring and were available to answer questions from students when needed.

Measures

Perceived Popularity

Using a peer nomination procedure established in previous studies (see Farmer & Rodkin, 1996; Farmer, Estell, Bishop, O'Neal, & Cairns, 2003; Rodkin et al., 2000), each participant was asked during the group survey session to nominate from free recall three classmates who best fit descriptors of various behaviors and social status. As per previously established practice for gathering peer nominations (see Cairns & Cairns, 1994; Farmer & Rodkin, 1996; Farmer et al., 2003; Rodkin, et al., 2000), no class list was provided for any nominations of peer social status or behavioral characteristics. The total number of nominations for each item a student received was standardized by school (three middle schools). To measure *perceived popularity*, the indicator of social status used in analyses, participants were asked to write down the names of three students who

were popular (“This person is popular at school, many classmates like to play with them or do things with them.”) but students were free to write fewer or more than three names.

Popularity Goal

Participants responded to a statement concerning their popularity goal which was adopted from a popularity measure created by Santor, Messervey, and Kusumakar (2000). Students were asked to evaluate how true each item was for themselves on a 5-point Likert scale ranging from 1 (*never true*) to 5 (*always true*). *Popularity goal* was measured by one item: “It’s important that people think I’m popular.” (Fall $M = 2.63$; $SD = 1.36$; Spring $M = 2.55$; $SD = 1.23$).

Perception of Popularity Peer Norm

During the group survey session, participants completed a school climate survey, asking about their perception of the behaviors of students at their school. Students responded to the statement “how true is this for people at your school?” using a 5-point Likert scale ranging from 1 (*not at all true*) to 5 (*very true*). Perceptions of the popularity peer norm consisted of five items: “*think that it is important that people see them as popular,*” “*drop friends who become unpopular,*” “*buy certain clothes because they are the “in” things to wear,*” “*ignore some people in order to be more popular with others,*” “*do things they are not supposed to do just to be popular*” ($M = 2.98$, $SD = 1.02$, $\alpha = .83$).

Peer Groups

This study employed the social cognitive map (SCM) procedure to identify peer groups (e.g., Bagwell, Coie, Terry, & Lochman, 2000; Cairns, & Cairns, 1994; Cairns,

Perrin, & Cairns, 1985). Numerous studies have used the SCM procedure and attest to the procedures reliability and validity. A three-week test-retest reliability test indicates that SCM had high short-term stability given that 90% of groups maintained their peer group members during the 3 week period (Cairns, Leung, Gest, & Cairns, 1995). Validity of the procedure has been established in direct observations and self-nominations (Cairns et al., 1995; Cairns, et al., 1985; Gest, Farmer, Cairns, & Xie, 2003). This procedure has also been shown to be robust to different participation rate levels with rates of 50% yielding group profiles largely identical to the group profiles identifies with participation rates of 100% (Carins et al., 1995).

During the group survey session, participants were asked to nominate peer groups in their grade: “Are there any students in your grade who hang around together a lot?” “Please write their names.” Following previously established practice for peer nominations, no class list of names was provided (e.g., Cairns et al., 1985; Cairns, Xie, & Leung, 1998). According to these nominations, peer groups were further identified based on (a) a co-occurrence matrix and (b) a correlational matrix (Cairns, Gariépy, & Kindermann, 1990; Cairns, et al., 1985).

A co-occurrence matrix was created with all students in the grade listed across the columns and down the rows. Any number in the off-diagonal matrix represented the number of times two students corresponding to that column and row were nominated in the same peer group. Each diagonal number of this matrix represented the total number of nominations a student received for any peer group. The numbers in the columns classified the adolescent’s personal profile of co-occurrences with other students in the same peer

group.

Next, a correlational matrix was created by intercorrelating the columns in the co-occurrence matrix. Degree of similarity between the two personal profiles of co-occurrences was measured by the magnitude of the correlation. When two students are in the same peer group, high similarity in their personal profiles of co-occurrences is expected. The correlation cutoff point of .40 was used to determine whether two adolescents are in the same peer group (Cairns et al., 1990).

Groups ranged in member size from 3 to 16 ($M = 5.74$, $SD = 3.24$). Peer group membership was identified for 263 participants in a total of 59 groups (groups with three or more members) with complete peer group data. Those without complete peer group data included participants in dyads, participants in groups with only nonparticipants, participants that were isolates (i.e., no peer group), and participants with only single nominations into a peer group. Single nominated participants were excluded because their nomination into a group could not be corroborated by others and therefore their membership in that group could not be verified. Of the 59 groups, 26 were all-girl groups, 26 were all-boy groups, and 7 were mixed-gender groups. Six of the mixed gender group had only 1 member of the opposite gender; the seventh group was evenly split between 2 boys and 2 girls. Because the influence of group gender was not a primary interest in this study, we did not exclude the mixed-gender peer groups from analyses. Of the 59 peer groups, 2 groups had nuclear members who were nonparticipants; therefore, those 4 students (2 in each group) were removed from analyses. A total of 232 (27 missing pop goal data for either fall, spring, or both) students belonging to 57 peer groups were

included in the final analyses. Participants included in analyses did not differ from participants excluded (232 vs. 31) in ethnic background or eligibility for free- or reduced-price lunch, χ^2 s < 3.838, ps > .428.

Treatment of Groups

There are a few concerns when dealing with peer groups that should be noted. First, adolescents may not have membership in any group but may be nominated in dyadic relationships. Given this paper's focus on peer group influences rather than friendship influences, adolescents in isolated dyads were removed from analyses. A second concern is that some adolescents may be members of multiple groups (Cairns et al., 1995). For those students nominated in multiple groups (i.e., dual membership), their primary and secondary group was identified based on the number of nominations they received for each. The group with the highest level of nominations was identified as the adolescent's primary group whereas all others were identified as secondary groups. Thus, the influence of the primary group was modeled in analyses including data on nuclear peer group members and the peer group popularity goal norm. This strategy is rooted in reasoning that higher nominations from peers indicates higher levels of social interaction among peer group members. Higher social interaction may be associated with greater peer influence from the group norm and from nuclear members.

Peer Group Norm for Popularity Goal

Peer group norm for popularity goal was computed by averaging all nuclear group members' popularity goal at Time 1. The status of each member in the group is computed using information from the SCM analysis. Using the original SCM algorithm (e.g., Cairns

& Cairns, 1994; Cairns et al., 1989), individual nomination was determined by the number of times a youth was nominated into a group. Then, group nomination was determined by averaging the individual nominations of the two most nominated members of the group. Nuclear members of the group have nomination numbers greater than or equal to 70 percent of the group nomination (i.e., $0.7 * \text{group nomination}$). Peripheral members of the group have nomination numbers less than 30% of the group nomination (i.e., $0.3 * \text{group nomination}$). All other members in the group were classified as secondary members of the group. Approximately 11.6% of students were peripheral members, 34.1% were secondary members, and 54.3% were nuclear group members. For this study, high-status members in a group refer to the nuclear members.

Popularity Status of Nuclear Members

The popularity status of nuclear group members as nominated by all peers was identified. Information on perceived popularity was gathered following a peer nomination procedure (see above). The mean popularity status of the group's nuclear members was calculated by averaging the perceived popularity scores of all nuclear members within a group. Given that nuclear members are assumed to serve as the group prototype (Hogg, 1996a, 2005b), the levels of popularity of the nuclear members serves as an indicator for the groups' popularity status. Henceforth, this variable will be referred to as *group popularity status* in my description of the results and in the discussion.

Individual Status in a Group

A target adolescent's status in the group was determined from the SCM analysis. Individual status was a continuous variable created by standardizing individual

nominations within a group in order to control for group differences in nominations. This measure of individual status in the group was shown to be a robust measure of each adolescent's power and prominence in his or her group (Shi & Xie, 2012).

Stability of Affiliation with Nuclear Members

Peer group membership is not fixed (Brown, 1990; Cairns et al., 1995) and the strength of a high-status member's power over other group members may vary depending on the amount of time the target adolescent affiliates with that high-status member. Thus, the stability of affiliating with high-status members was controlled. The SCM procedure was used to identify target adolescents peer groups in both the fall and spring semester of 6th grade. From that information, a target adolescent's stability of affiliation with high-status peer group members was calculated. After counting the number of high-status members who were in the same peer group as the target adolescent (excluding the target child if he or she was a high-status member), we then divided that count by the total number of high-status members in the target adolescent's peer group at time 1 (fall semester). The stability of affiliating with high-status peers ranged from 0 to 1 ($M = .50$, $SD = .46$). Stability was significantly correlated with individual status in a group, $r = .16$, $p < .05$. Individual's stability in their affiliation with high-status members in group increases as his or her own level of status in the group increased.

Analytic Plan

Correlational analyses were used to investigate the relations among the study variables. To test change over time, this study employed Hierarchical Linear Modeling (HLM) to test the longitudinal hypotheses using a two-level hierarchical structure with

adolescents nested in peer groups. This procedure allowed for analyses of effects at both individual and group levels with unbiased errors (Raudenbush & Bryk, 2002). Level-1 variables were grand-mean centered except for sex which was entered as a dichotomous variable given its categorical property. All variables at level-2 were also grand-mean centered. Grand-mean centering adjusts the level-2 relationship between predictor and outcome variables for the influence of level-1 predictor (Bryk & Raudenbush, 1992). I predicted that effects of peer group influence would be similar for both genders; theoretically, there is no indication that the influence of peers on a social goal operates differently for boys or girls. Additionally, it was shown that popularity goal was not significantly related to gender at Time 1 (Dawes & Xie, 2014) or Time 2 (current study). However, gender was entered as a control into the models.

Hypothesis One

To test the first hypothesis examining the influence of peer group norm on popularity goal at Time 2, a two-level HLM model was used. At level-1, the target adolescent's Time 2 popularity goal was entered as the dependent variable with Time 1 popularity goal entered as the control variable. Sex and stability of affiliation with nuclear group members were also entered as controls at level-1. At level-2, the intercept of the level-1 model was entered as the dependent variable (β_0) and the peer group norm for popularity goal at Time 1 was entered as the independent variable. A significant coefficient for the intercept provided a test for whether the peer group norm influenced the target adolescent's popularity goal over time after controlling for Time 1 popularity goal. The equation for hypothesis one was:

$$\text{Level 1: } (\text{Pop Goal}_i)_{T2} = \beta_{0j} + \beta_{1j} (\text{Pop Goal})_{T1} + \beta_{2j} (\text{Sex}) + \beta_{3j} (\text{Stability}) \\ + r_{ij} (\text{individual error})$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Peer Group Norm})_{T1} + \mu_{0j} (\text{group error})$$

Hypothesis Two

To test hypothesis two, examining the two-way interaction between peer groups' norm for popularity and peer groups' popularity status, the same two-level model approach was employed. The two-level model for hypothesis two extended the model from hypothesis one with the inclusion of peer groups' popularity status and the interaction between peer groups' norm and peer groups' popularity status at level-2. A significant coefficient for the intercept provided a test for the main effects and interaction effects of peer groups' norm for popularity goal and peer groups' popularity status on the target adolescent's Time 2 popularity goal, after controlling for his/her popularity goal at Time 1. The level-1 model for hypothesis one was entered as the level-1 model for hypothesis two. The equation for the level-2 model of hypothesis two was:

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Peer Group Norm})_{T1} + \gamma_{02} (\text{Peer Group Pop Status})_{T1} \\ + \gamma_{03} (\text{Peer Group Norm} * \text{Peer Group Pop Status})_{T1} + \mu_{0j} (\text{group error})$$

Hypothesis Three

A two-level model was also used to test hypothesis three, examining the three-way interaction between peer groups' norm for popularity, the peer groups' popularity status, and the target adolescent's status within the group on the target adolescent's popularity goal at Time 2. At level-1, popularity goal at Time 1, sex, and stability of affiliation with nuclear members were entered as controls. The target adolescent's status

within his/her group at Time 1 entered as the independent variable at level-1. The level-2 model included the intercept of the level-1 model (β_0) as the dependent variable with peer groups' norm for popularity goal, peer groups' popularity status, and the interaction between groups' norm for popularity goal and groups' popularity status entered as independent variables. The level-2 model also included the target adolescent's status from the level-1 model (β_4) as the dependent variable with peer groups' popularity goal, peer groups' popularity status, and the interaction between peer groups' popularity goal and peer groups' popularity status entered as independent variables to model the cross-level interaction. Significant coefficients for the level-2 independent variables provided a test for the cross-level interaction effects of peer group popularity goal norm, groups' popularity status, and target adolescent's status at Time 1 on his or her Time 2 popularity goal, after controlling for his/her popularity goal at Time 1. The equation for hypothesis three was:

$$\text{Level 1: } (\text{Pop Goal})_{T2} = \beta_{0j} + \beta_{1j} (\text{Pop Goal})_{T1} + \beta_{2j} (\text{Sex}) + \beta_{3j} (\text{Stability}) + \beta_{4j} (\text{Target Status})_{T1} + r_{ij} (\text{individual error})$$

$$\begin{aligned} \text{Level 2: } \beta_0 &= \gamma_{00} + \gamma_{01} (\text{Peer Group Norm})_{T1} + \gamma_{02} (\text{Peer Group Pop Status})_{T1} + \gamma_{03} (\text{Peer Group Norm} * \text{Peer Group Pop Status})_{T1} + \mu_{0j} (\text{group error}) \\ \beta_4 &= \gamma_{20} + \gamma_{21} (\text{Peer Group Norm})_{T1} + \gamma_{22} (\text{Peer Group Pop Status})_{T1} + \gamma_{23} (\text{Peer Group Norm} * \text{Peer Group Pop Status})_{T1} + \mu_{2j} (\text{group error}) \end{aligned}$$

Hypothesis Four

To test hypothesis four, examining the association between the adolescent's perceptions of the popularity peer norms and his/ her own popularity goal, a single-level

model was analyzed in HLM. At level-1, adolescent's popularity goal at Time 2 was entered as the dependent variable and popularity goal at Time 1 was entered as a control variable. Perceptions of the popularity peer norms at Time 1 was entered in level-1 as the independent variable. A significant coefficient for the perceived peer norm tested the main effect of adolescent's perception of the popularity peer norm on his or her popularity goal at Time 2, after controlling for popularity goal at Time 1. The equation for hypothesis four was:

$$\text{Level 1: (Pop Goal)}_{T2} = \beta_{0j} + \beta_{1j} (\text{Pop Goal})_{T1} + \beta_{2j} (\text{Sex}) + \beta_{3j} (\text{Stability}) + \beta_{4j} (\text{Perceived Norm})_{T1} + r_{ij} (\text{individual error})$$

Hypothesis Five

The final hypothesis tested examined the two-way interaction between perceptions of the popularity peer norm and peer groups' norms for popularity goal. A two-level model was used to test this hypothesis. At level-1, popularity goal at Time 2 was again entered as the dependent variable with popularity goal at Time 1 entered as a control variable and perception of the popularity norm entered as the independent variable. The level-2 model included the intercept of the level-1 model (β_0) as the dependent variable with peer group's popularity goal entered as independent variables. The level-2 model also included the adolescent's perception of the popularity norm (β_4) as the dependent variable with peer groups' norm for popularity goal as the independent variable to model the cross-level interaction. A significant coefficient for the peer groups' norm for popularity goal at β_4 tested the cross-level two-way interaction between peer groups' norm for popularity goal and adolescents' perceptions of the popularity peer

norm on adolescent's popularity goal at Time 2, after controlling for popularity goal at

Time 1. The equation for hypothesis five was:

$$\text{Level 1: (Pop Goal)}_{T2} = \beta_{0j} + \beta_{1j} (\text{Pop Goal})_{T1} + \beta_{2j} (\text{Sex}) + \beta_{3j} (\text{Stability}) + \\ \beta_{4j} (\text{Perceived Norm})_{T1} + r_{ij} (\text{individual error})$$

$$\text{Level 2: } \beta_0 = \gamma_{00} + \gamma_{01} (\text{Peer Group Norm})_{T1} + \mu_0 (\text{group error})$$

$$\beta_4 = \gamma_{20} + \gamma_{21} (\text{Peer Group Norm})_{T1} + \mu_2 (\text{group error})$$

CHAPTER 3

RESULTS

Relations Among Study Variables

Correlational analyses were conducted to test for relations among all study variables. Means, standard-deviations, and zero-order correlations for all study variables are listed in Table 1. Sex was not correlated with any of the other individual or group variables, $r_s < -.09$, *ns*.

Popularity goal in the fall was significantly related to popularity goal in the spring, $r = .51$, $p < .001$. Popularity goal at both time points was also significantly related to perceptions of the popularity peer norm, $r_s > .24$, $p_s < .001$. This indicates that youth who place greater importance on popularity goal also perceive a higher peer norm for popularity. Popularity goal at both time points was also positively related to individual's popularity status, $r_s > .25$, $p_s < .001$, and groups' popularity status, $r_s > .28$, $p_s < .001$, indicating that higher levels of popularity status, both as an individual and as a group, were related to greater importance of a popularity goal. There was also a significant positive association between popularity goal at both time points and the group norm for popularity goal, $r_s > .38$, $p_s < .001$. Endorsing higher importance of a popularity goal was positively related to being a group with a high group norm for popularity goal. Popularity goal was not significantly related to the individual's status within the group, $r_s < .05$, *ns*. However, an adolescent's popularity goal in the fall semester was significantly related to the stability of affiliating with nuclear peer groups members from fall to spring semester,

$r = .13, p = .047$. A higher popularity goal was related to greater stability in affiliation with nuclear members of one's group.

Table 1
Means, Standard Deviations, And Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9
1. Sex									
2. Popularity Goal	.08								
3. Popularity Goal (Spring)	.06	.51***							
4. Perceived Peer Norm	.02	.26***	.24***						
5. Individual Popularity Status	-.09	.25***	.33***	.05					
6. Individual Status in Group	.02	.05	.01	-.09	.37***				
7. Group Norm for Popularity Goal	.02	.51***	.38***	.18**	.24***	-.01			
8. Group Popularity Status	-.07	.28***	.34***	.06	.66***	.01	.42***		
9. Stability of Nuclear Affiliation	-.08	.13*	.09	.01	.25***	.16*	.19**	.32***	
	M	2.63	2.55	2.98	-0.19	0.10	2.67	0.08	0.50
	(SD)	(1.36)	(1.23)	(1.02)	(0.71)	(0.87)	(1.14)	(0.74)	(0.46)

Note. Sex reference group = male. All variables assessed in the fall semester of 6th grade with the exception of popularity goal in the spring semester. Individual status in the group = standardized individual nominations within a group. Individual Popularity Status = perceived popularity status, peer nomination, standardized by school and transformed. Popularity Group Norm = average fall popularity goal of groups' nuclear members. Group Popularity Status = average fall popularity status of groups' nuclear members. Stability of Nuclear Affiliation = proportion score of the number of nuclear members that remained constant from fall to spring semester for each individual, not including individual's own nuclear status.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Perceived peer norm for popularity was not significantly related to individual's popularity status, $r = .05$, *ns*. This indicates that both popular and unpopular youth held similar ranges of perceptions of the popularity peer norm. Similarly, perceived peer norm for popularity was not related to the group's popularity status, $r = .06$, *ns*. Thus, members of popular groups had similar variability in their perceptions of the popularity peer norm as members of unpopular groups. Perceived peer norms were also unrelated to individual status with the group, $r = -.09$, *ns*. Lastly, perceived peer norm for popularity was significantly related to the group norm for popularity goal, $r = .18$, $p < .01$. Being in a group that had a higher norm for popularity goal importance was related to perceiving greater importance for popularity in the broader peer network. Lastly, youths' perceived peer norm for popularity was not significantly related to their stability of affiliating with nuclear group members, $r = .01$, *ns*.

There was a significant positive association between adolescents' popularity status and their status within the group, $r = .37$, $p < .001$. This indicates that higher popularity status in the peer network was related to having higher status within the group. Individual popularity status was significantly related to the group norm for popularity goal, $r = .24$, $p < .001$, indicating that higher individual popularity status is associated with higher group norm for popularity goal. Lastly, there was a significant positive association between individual's popularity status and the groups' popularity status, $r = .66$, $p < .001$. This indicates that youth who have high popularity status tend to be in groups with high popularity status. Individual's popularity status was significantly related to his or her stability of affiliation with nuclear group members, $r = .25$, $p < .001$. Having

high popularity status as an individual was related to greater stability in affiliation with nuclear group members.

An individual's status in the group was not significantly related to the group norm for popularity goal, $r = -.01$, *ns*. Status within the group was also not significantly related to groups' popularity status, $r = .01$, *ns*. Groups' popularity status was significantly related to the groups' popularity goal norm, $r = .42$, $p < .001$. Higher group popularity status was associated with higher group norms for popularity goal, indicating that popular groups endorsed greater importance of a popularity goal. Group popularity status was also significantly related to stability of nuclear member affiliation, $r = .32$, $p < .001$. High popular groups tend to have higher stability of nuclear members over time. Stability of nuclear members over time was also significantly related to the group norm for popularity goal, $r = .19$, $p < .01$. Being in a group with a higher norm for popularity goal was associated with higher stability in nuclear member affiliation.

Testing Hypothesis One

Hypothesis One: Peer group popularity goal norm at Time 1 will be associated with a target adolescent's popularity goal at Time 2, controlling for the adolescent's popularity goal at Time 1. Higher peer group norm of popularity goal at Time 1 will predict greater increases in the target adolescent's popularity goal from Time 1 to Time 2.

In order to test this hypothesis, I used Hierarchical Linear Modeling (HLM) with individuals at level-1 nested in peer groups at level-2. Popularity goal at Time 2 was entered as the dependent variable at level-1. Control variables at level-1 included:

popularity goal at Time 1, sex, and the stability of affiliation with nuclear members from Time 1 to Time 2. Despite the fact that sex was not significantly related to any study variables, it was still entered into the models as a control variable. At level-2, the randomly varying level-1 intercept was entered as the dependent variable with group norm at Time 1 being entered as the independent variable. Results are summarized in Table 2, Model 1. A significant positive association was found between groups' norm for popularity goal at Time 1 and adolescents' popularity goal at Time 2, after controlling for their own popularity goal at Time 1, $\beta = 0.180$, $SE = 0.087$, $p = .042$. Group norm effect was plotted using one standard deviation above the mean (high) and below the mean (low, see Figure 1). Being in a group with a high group norm for popularity goal at Time 1 was associated with higher levels of popularity goal at Time 2 compared to the popularity goal of adolescents in groups with a low group norm for popularity goal.

Testing Hypothesis Two

Hypothesis Two: The target adolescent's popularity goal at Time 2 will be more strongly associated with the peer group norm set by nuclear members with higher network popularity status at Time 1, after controlling for the target adolescent's popularity goal at Time 1.

Hypothesis two was tested using a two-level HLM model in which the variance in individual adolescents' popularity goal at Time 2 was modeled in Level-1 and was predicted by group norm for popularity goal at Time 1, groups' popularity status, and the two-way interaction between groups' norm and groups' popularity status at level-2. Results are presented in Table 2, Model 2. There was a significant negative coefficient

for the interaction of groups' norm and groups' popularity status on adolescents' popularity

goal over time, $\beta = -0.188$, $SE = 0.079$, $p = .022$. Groups' popularity status significantly moderated the group norm influence on adolescents' popularity goal. The plot of the interaction effect used one standard deviation above and below the mean for both group norm and groups' popularity status. As Figure 2 indicates, being in a group with high group norm had a positive effect on adolescents' popularity goal if their group had low popularity status. In contrast, the popularity goal of adolescents in high popular groups was relatively high, regardless if their groups had a high or low norm for popularity goal.

Testing Hypothesis Three

Hypothesis Three: The strength of the association between peer group norm for popularity goal at Time 1 and target adolescent's popularity goal at Time 2, after controlling for goal at Time 1, will be stronger the more popular the group and the lower the target adolescent's status within the group.

Hypothesis three was tested using a two-level HLM model in which the variance in individual adolescents' popularity goal at Time 2 was modeled in Level-1 and was predicted by group norm for popularity goal at Time 1, groups' popularity status, the two-way interaction between groups' norm and groups' popularity status at level-2. and finally, the cross-level three-way interaction between individual status within the group (level-1), group norm for popularity goal (level-2), and groups' popularity status (level-2). Results are summarized in Table 2, Model 3. There was a trending association between the interaction of group norm, group popularity status, and individual status

Table 2
Estimated Coefficients And Standard Errors From The HLM Analyses Of Group Norm, Group Popularity Status, And Individual Status In A Group On Adolescents' Popularity Goal Over Time

Variables	Model 1 β (SE)	Model 2 β (SE)	Model 3 β (SE)
Intercept, B0			
Intercept	2.493 (.095)***	2.470 (.078)***	2.458 (.076)***
Group Norm	0.180 (.087)*	0.173 (.091)†	0.144 (.091)
Group Pop Status		0.805 (.252)**	0.811 (.262)**
Group Norm * Group Pop Status		-0.188 (.079)*	-0.187 (.080)*
Fall Popularity Goal (Control), B1			
Intercept	0.372 (.071)***	0.348 (.075)***	0.388 (.070)***
Sex (Control), B2			
Intercept	0.080 (.149)	0.105 (.121)	0.129 (.118)
Stability of Nuclear Member Affiliation (Control), B3			
Intercept	0.023 (.183)	-0.096 (.165)	-0.129 (.157)
Status in Group, B4			
Intercept			-0.013 (.097)
Group Norm			-0.079 (.143)
Group Pop Status			0.839 (.292)**
Group Norm * Group Pop Status			-0.246 (.141)†

Note. Group norm = average popularity goal of all nuclear members in a group. Pop = perceived popularity status. Status in group = standardized individual nominations within a group. Significant for variance components was based on chi-square tests.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

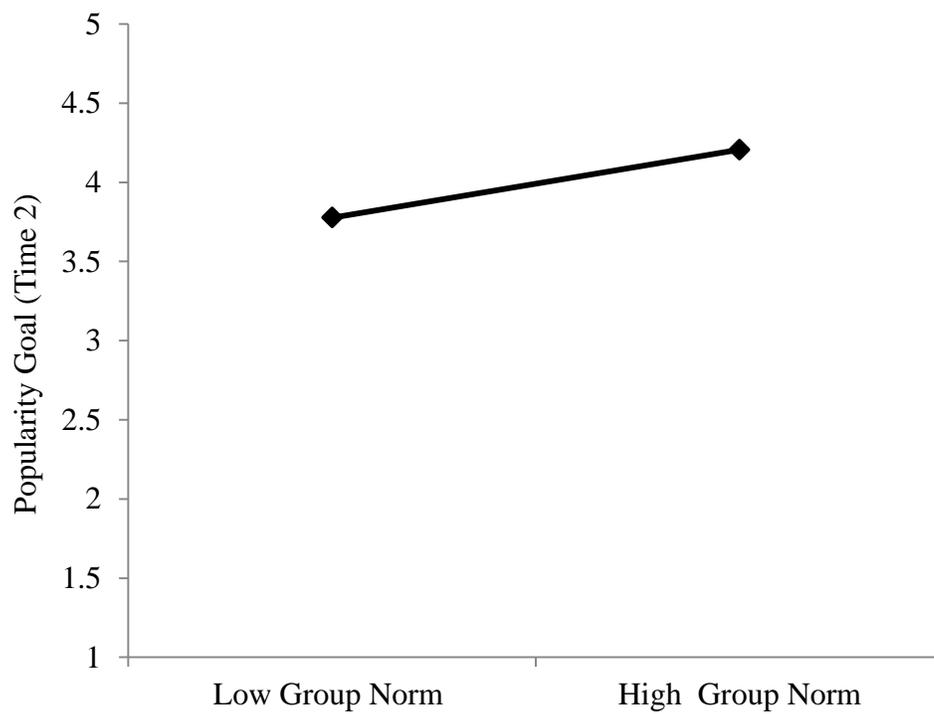


Figure 1: Predicting Time 2 Popularity Goal From Time 1 Group Norm

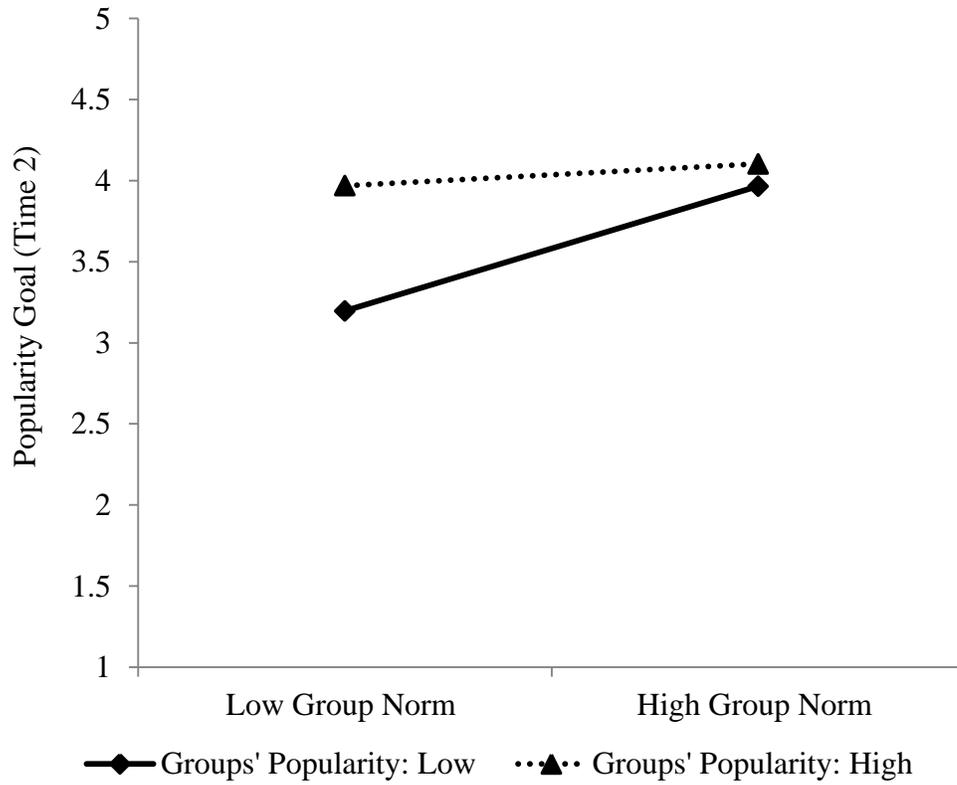


Figure 2: Predicting Time 2 Popularity Goal From Time 1 Group Norm And Group Popularity.

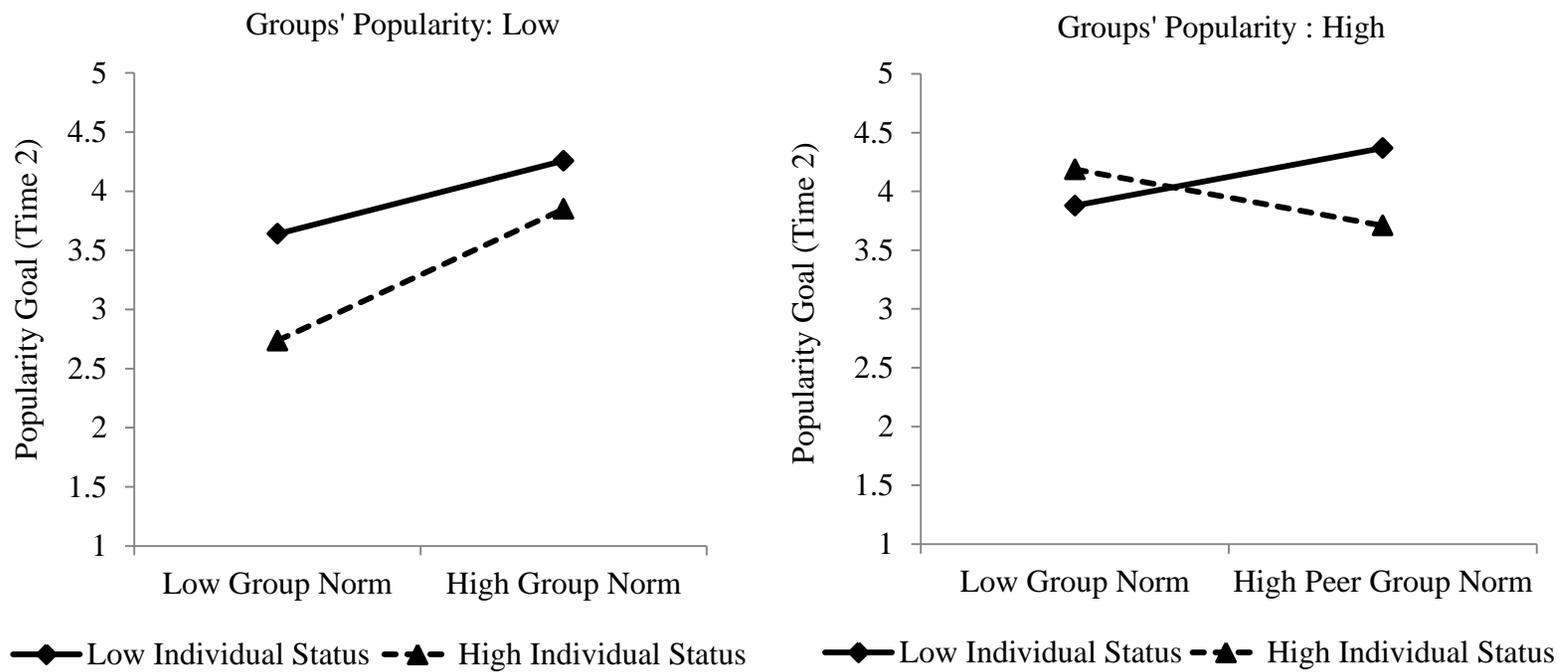


Figure 3: Predicting Time 2 Popularity Goal from Time 1 Group Norm, Group Popularity Status, and Individual Status in a Group.

within the group with adolescents' popularity goal over time, $\beta = -0.246$, $SE = 0.141$, $p = .086$. The three-way interaction effect was plotted using one standard deviation above and below the mean for all three variables (see Figure 3). There was a positive association between group norm and popularity goal over time for both high and low status individuals in low popular groups (Figure 3, left panel). There was also a positive association between group norm and popularity goal over time for low status individuals in high popular groups (Figure 3, right panel). For high status individuals in high popular groups, there was a negative association between group norm and popularity goal over time (Figure 3, left panel).

Testing Hypothesis Four

Hypothesis Four: The target adolescent's popularity goal at Time 2 will be associated with perceived peer norms for popularity in the broader social network at Time 1, after controlling for his/her popularity goal at Time 1.

Hypothesis four was tested in a single-level linear regression model in HLM in which variance in individual adolescents' popularity goal at Time 2 was modeled at level 1 and was predicted by perceptions of the popularity peer norms at Time 1. Results are summarized in Table 3, Model 1. The association between perceptions of the popularity peer norm and adolescent's popularity goal approach significance, $\beta = 0.149$, $SE = 0.079$, $p = .062$. To test whether this association would remain after controlling for the influence of peer group norm, I tested a two-level HLM model. The same level-1 model was entered with the addition of the stability of affiliation with nuclear members as a control

variable at level-1. At level-2, peer group norm was entered as an independent variable. Results are shown in Table 3, Model 2. The trending association found in Model 1 remained even after controlling for the peer group norm, $\beta = 0.141$, $SE = 0.079$, $p = .077$ (Model 2, Figure 4). There was a positive association between adolescents' perceptions of the peer norm and their popularity goal over time: perceiving that peers in the broader social network cared more about popularity status was associated with higher levels of the popularity goal, even after controlling for the influence of the group norm.

Testing Hypothesis Five

Hypothesis Five: The strength of the association between perceived peer norms for popularity at Time 1 and target adolescent's popularity goal at Time 2, after controlling for goal at Time 1, will be stronger the higher the peer group norm for popularity goal at Time 1.

A two-level HLM model tested the hypothesis with variance in individual adolescents' popularity goal at Time 2 modeled at level 1 which was predicted by perceptions of the popularity peer norms were at level-1, the group norm at level-2, and the cross-level interaction between perceptions of the popularity peer norm and group norm. Results are shown in Table 3, Model 3. There was no significant interaction between perceived peer norms and group norms on popularity goal, $\beta = -0.049$, $SE = 0.059$, $p = .407$. Thus, the strength of the association between perceived peer norms and popularity goal over time was not moderated by group norms. Although the interaction was not significant, the positive association between perceived peer norms on

adolescent's popularity goal over time still approached significance, $\beta = 0.137$, $SE = 0.079$, $p = .080$, even after controlling for the influence of group norms for popularity goal on the intercept.

Table 3

Estimated Coefficients And Standard Errors From The HLM Analyses Of Perceived Peer Norms For Popularity And Groups' Norms On Adolescent's Popularity Goal

	Model 1	Model 2	Model 3
Variables	β (SE)	β (SE)	β (SE)
Intercept, B0			
Intercept	2.515 (.112)***	2.502 (.109)**	2.514 (.112)
Group Norm		0.172 (.088)†	0.172 (.086)†
Fall Popularity Goal (Control), B1			
Intercept	0.403 (.068)***	0.347 (.075)***	0.350 (.074)***
Sex (Control), B2			
Intercept	0.071 (.162)	0.086 (.152)	0.081 (.152)
Stability of Nuclear Member Affiliation (Control), B3			
Intercept		0.035 (.184)	0.052 (.189)
Perceived Peer Norm, B4			
Intercept	0.149 (.080)†	0.141 (.079)†	0.139 (.079)†
Group Norm			-0.049 (.059)

Note. Group norm = average popularity goal of all nuclear members in a group. Perceived peer norm = perceived peer norm for popularity.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

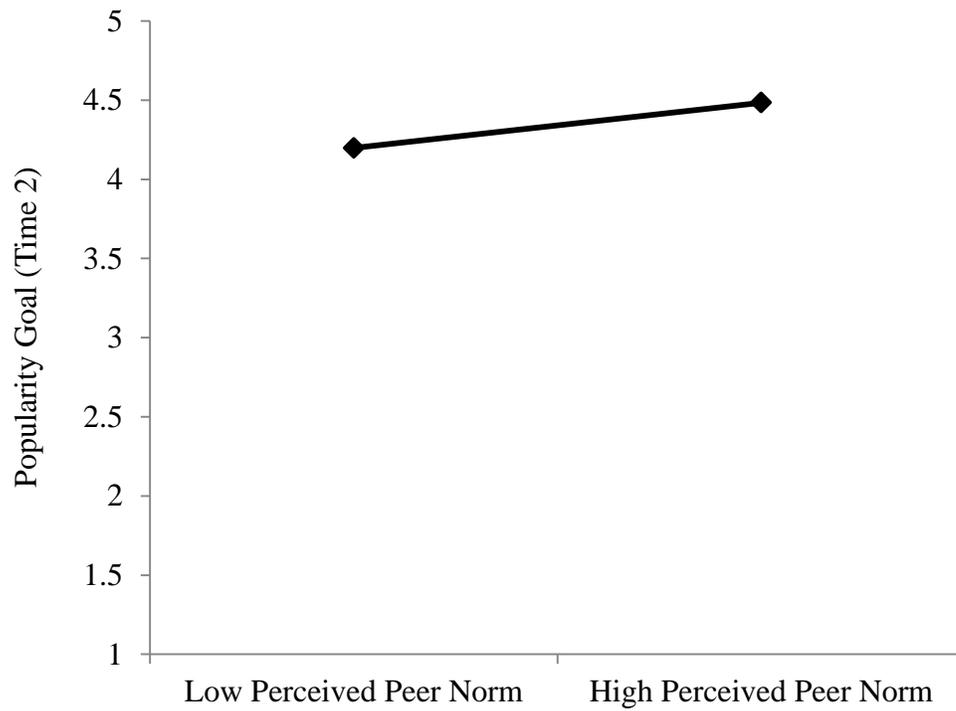


Figure 4: Predicting Time 2 Popularity Goal From Time 1 Perceived Peer Norm For Popularity.

CHAPTER 4

DISCUSSION

The first major aim of this study was to assess how peer group norms for popularity goal may influence an early adolescent's popularity goal over time. To address this aim, I conducted longitudinal analyses of individuals nested within peer groups using Hierarchical Linear Modeling statistical procedures. Results demonstrate that the process of group norm influence is not straightforward; there is a complex interaction between group and individual variables that contribute to changes in youths' popularity goal over time. In line with my expectations, there was a three-way interaction between groups' norm for popularity goal, groups' popularity status, and individual's own status within the group at Time 1 on early adolescents' popularity goal at Time 2. The strength of the association between group norm and popularity goal revealed different patterns depending on the groups' popularity status and youths' status within their groups. These results contribute to our understanding of the complex process of group influence on early adolescent's popularity goal and help establish a foundation for further exploration of how groups may influence other social goals.

The second major aim of this study was to investigate how peer influence in the form of perceived peer norms for popularity may influence an early adolescent's popularity goal over time. Results indicate that higher perceived peer norms were associated with higher importance of popularity goal over time, even after controlling for

the influence of group norms. Additionally, there was no interaction between perceived peer norms and group norms, suggesting that these types of peer influence operate independently. In general, results from all hypothesis tests indicate that peer influence on adolescents' popularity goals comes from both within and outside one's group. This underscores the importance of modelling peer influence from multiple contexts in order to contribute to a more complete understanding of how peers may influence adolescents' development.

Testing Peer Influence on Early Adolescents' Popularity Goals

Results from the correlational analyses demonstrated positive associations between both group norms and perceived peer norms with adolescent's popularity goal at both time points. Further analyses, conducted to test how these norms influenced goals over time and how these associations may differ for adolescents, showed a positive association between group norms for popularity goal and early adolescents' popularity goal over time. Being a member of a group with a high norm for popularity goal at Time 1 was associated with higher levels of popularity goal at Time 2, compared to the popularity goal of adolescents in groups with a low norm. This finding indicates that early adolescents may be socialized according to the norms within their group for a particular social goal. Group norms are assumed to be powerful sources of influence in the lives of adolescents, particularly during a time when peer acceptance becomes increasingly important to youth (Adler & Adler, 1998; Forgas & Williams, 2001; Kameda et al., 2005; Sullivan, 1953). Frequent interaction with peer group members

provides the opportunity to learn of other members' social goals (Kinderman & Gest, 2009; Rubin et al., 2008). Processes of interactional synchrony may encourage the adolescent to match his or his own goal to that of the group norm in order to continue synchronized interactions that are crucial for maintaining the groups' existence (Cairns, 1979; Cairns & Cairns, 1994; Cairns et al., 1989; Farmer et al., 2007). Adhering to the group's norm may also help members avoid rejection from the group (Kruglanski & Webster, 1991). Numerous longitudinal studies have demonstrated how group norms influence group members' behaviors and attitudes (Ellis & Zarbatany, 2007; Espelage et al., 2003; Kinderman, 1993; Ryan & Patrick, 2001; Sijtsema et al., 2010; Shi & Xie, 2012). Results from this current study extend the literature into the realm of social goals with evidence that individuals may change their popularity goal over time in order to be consistent with their groups' norm (Forgas & Williams, 2001; Kameda et al., 2005).

As expected, there was an interaction among group norm and groups' popularity status on popularity goal over time. However, the strength of the association was contrary to my expectations. The results indicate that there was a positive association between high group norm and popularity goal for those adolescents in low popular groups whereas the popularity goal of adolescents in high popular groups was high regardless of whether that group had a high or low norm for popularity goal. These are social benefits to being in highly popular groups, such as greater peer attention and peer support (Hawley, 1999). Individuals in groups with popular members may be keenly aware of the benefits associated with elevated popularity status because they are able to witness the social

benefits directly from interactions with their popular group members. This may prompt the desire to gain or maintain access to those popularity-related resources. Such a desire is likely to lead them to place high importance on a popularity goal, even if their groups' nuclear members initially established a low group norm for popularity goal. This result suggests that for youth in high popular groups, the popularity status of members may serve as a more compelling socializing factor than the group norm.

In line with my expectations, there was a significant interaction between group norm, group popularity status, and individual status within the group on adolescents' popularity goal over time. Further examination indicated that there was a positive association between group norm and individual adolescents' popularity goal over time for three subgroups of individuals: one, low status youth in high popular groups; two, low status youth in low popular groups; and three, high status youth in low popular groups. The only exception for this trend was the subgroup of high status youth in high popular groups. For this subgroup, there was a negative association between group norm and popularity goal over time.

For low status youth in high popular groups, adolescents' popularity goal was higher in groups that had a higher group norm for popularity goal as compared to the popularity goal of low status youth in popular groups that had lower group norms for popularity goal. This trend demonstrated the positive influence of group norms on low status youth in high popular groups. Low status group members were expected to be more open to the influence of a high group norm when that norm was established by high

popular nuclear members (Bandura et al., 1963b; Brown et al., 2008; Cohen & Prinstein, 2006; Ellis & Zarbatany, 2007; Forgas & Williams, 2001; Kameda et al., 2005; Latané, 1981; Rosenbaum & Tucker, 1962). However, a similar positive trend was also found for youth in subgroups two and three: low status and high status adolescents' in low popular groups. Thus, this finding was not in line with the expectation that the association between group norm and individual adolescents' popularity goal would be stronger for those low status individuals in popular groups. First, this finding indicates that the popularity status of the group did not strengthen the association between group norms and adolescents' popularity goal over time for low status youth. Second, this finding indicates that high status youth in low popular groups are also open to the influence of group norms. These subgroups represent adolescents at different levels on the social status hierarchy but it is reasonable to assume that these youth do not represent the top of the status hierarchy. That position is likely occupied by the high status individual in high popular groups. Thus, evidence suggests that group norms for popularity goal serve as powerful sources of influence for these youth who do not have the highest position in the peer network (Forgas & Williams, 2001; Kameda et al., 2005).

The positive association between group norm and adolescents' popularity goal over time for low status and high status youth in low popular groups revealed an interesting pattern. Low status youth in groups with low popularity status appeared to have higher popularity goal at Time 2 compared to high status youth in groups with low popularity status. Why? It may be that these low status youth seek greater peer

acceptance through their pursuit of a popularity goal regardless of their groups' norm for popularity goal. These low status youth in low popular groups likely have low levels of popularity status as well and may be positioned at the periphery of the overall peer network. Their position may put them at risk for social isolation if they lose their group membership. In an effort to avoid such a fate, they may endorse high importance for a popularity goal in the hopes that pursuing such a goal may gain them greater acceptance by their peers. However, pursuit of a popularity goal may backfire for these low popular individuals depending on the behaviors they use to achieve their goal. For example, a recent study found that low popular individuals with high popularity goals did not increase their popularity status over time the more physical or social aggression they used (Dawes & Xie, 2014). This may put these youth in a state of desperation: wanting peer acceptance through popularity status but unable to achieve it. Being unable to achieve their goal may encourage some adolescents to increase their efforts which may put them at risk for social rejection (Dodge, 1983; Lochman & Dodge, 1998). Such youth may need to be targeted for interventions to help them establish more appropriate social behaviors to achieve their social goals in order to avoid long-term negative consequences associated with peer rejection (Bierman, 2004).

The only exception to the positive association between group norm and popularity goal over time was for the fourth subgroup of adolescents with high status in high popular groups. For high status adolescents in high popular groups, a lower group norm was associated with a higher popularity goal at Time 2. Because these youth were in

groups with low group norms at Time 1, their higher levels of popularity goal at Time 2 may not be attributed to socialization from the groups' norm. It may be that these youth recognize and capitalize on the opportunity to climb the social ladder by having a high popularity goal. If other high status members of their groups are not as concerned with popularity goal at Time 1, it presents the opportunity for some of those high status members in the group to assert their social dominance through the pursuit of a popularity goal. In essence, there may be a void in their group that these youth are taking advantage of; they may be able to secure a higher position or solidify their position at the top of their group by pursuing a higher popularity goal. Over time, these youth will help set a higher group norm for popularity goal.

A striking finding for the high status youth in high popular groups was the lower levels of popularity goal at Time 2 for adolescents in groups that had high group norm for popularity goal at Time 1. This lower level of popularity goal for these high status youth may be explained by the difference between the goal-directed effort required to gain higher status and the effort required to maintain status. Because these youth have high status positions in high popular groups, it is safe to assume that these individuals have high perceived popularity. Because they already have the social and material resources associated with popularity (Farmer & Rodkin, 1996; Fiske, 1993; Hawley, 1999), they may not need to put forth as much effort to maintain their status as they would if they had lower status to begin with. These youth may be better able to successfully implement different goal-directed strategies to maintain their status (Dawes & Xie, 2014), such as

choosing an appropriate target for a socially aggressive attack (Cillessen & Rose, 2005). Therefore, a popularity goal may not be as important to them over time because they feel more confident in their ability to maintain their status.

In line with expectations, there was a positive association between perceived peer norms for popularity and youths' popularity goal over time. This positive association remained even after controlling for the group norm for popularity goal. The results suggest that youth's own goals are influenced by perceived peer norms and that youths' perceptions of the popularity peer norm extend beyond their own group to the broader peer network. These perceptions likely serve as compelling sources of influence in early adolescents' own popularity goal. This is in line with principles from social cognitive theory and social information processing models (Bandura, 1989, 2001; Crick & Dodge, 1994), that perceptions are incorporated into further cognitive processes, such as the establishment of goals. Additionally, according to social comparison theory, individuals compare their own goal to their perceptions of others' goal and will alter their goal in order to reduce any discrepancy between the two (Festinger, 1954). Results from this study indicate the importance of considering youths' perceptions of the peer norms as these perceptions are then incorporated into their own goals (Bandura, 1989, 2001; Crick & Dodge, 1994).

Contrary to expectations, the association between perceived peer norms for popularity and adolescents' popularity goal over time was not strengthened by group norms for popularity goal. According to social learning theory (Bandura, 1971), an

individual who values the outcome of conforming to in a reinforced direction is more likely to change his or her attitudes or behaviors. It was assumed that youth would be more likely to conform to their group's high popularity goal norm if they also perceived higher network norms, seemingly because the value of popularity goal is being reinforced from more than one source. However, results indicate that higher perceptions of the popularity peer norm did not increase youths' susceptibility to the influence of their peer groups' norms. What explains this lack of moderation? There may be a mismatch in the value of conforming to the different norms. Conforming to the peer group norm may help the adolescent maintain their position or membership in that group. For instance, an adolescent who alters his or her popularity goal in line with the group's norm for popularity goal is helping to maintain synchronized interactions among group members and potentially avoiding rejection from the group (Cairns, 1979; Kruglanski & Webster, 1991). In contrast, conforming to the perceived network norm for popularity by engaging in similar behaviors may help an adolescent's position in the overall status hierarchy but not necessarily their position in his or her group. This potential inconsistency between the values associated with conforming to the different norms may explain why higher perceived network norms for popularity did not increase openness to influence from the peer group. Despite that lack of an interaction effects, this study revealed that both types of norms were related to adolescents' popularity goal over time. This finding suggests the need to consider multiple levels of peer influence on adolescents' social goals.

The Influence of Peers: Group Norms and Perceived Peer Norms

Social norms serve as powerful sources of guidance in individuals' lives. These norms may be particularly relevant for early adolescents given the increasing importance of peers at this developmental stage and the increased need for peer acceptance (e.g., Adler & Adler, 1998; Sullivan, 1953). This study addressed two forms of peer influence: group norms for popularity goal and perceived network norms for popularity status. Results from this study indicate that both type of influence independently contribute to changes in adolescents' popularity goal over time. By assessing norms both in the immediate group context and their perception of peer norms in the broader peer network, this study is rooted in social cognitive and social-ecological approaches which acknowledge the interaction between individuals and their social environment (Bandura, 1989, 2001; Bronfenbrenner, 1979). It is also in line with recent recommendations that it is important to study the relational context within which youth set goals (Salmivalli & Peets, 2009).

This study demonstrated that the influence of group norms is moderated by the individual's status in the group and the group's popularity status. Some previous research has explored how group influence might be different according to peer group status and individual status (e.g., Ellis & Zarbatany, 2007; Shi & Xie, 2012). The current study continues with this line of research on peer group norm influence and extends our knowledge of these processes into the area of adolescent social goals. Additionally, this study found that perceived peer norms do contribute positively to adolescents' popularity

goals. Results for both forms of peer influence underscore the importance of assessing factors of influence both within and outside the peer group. This study represents an important step forward in our understanding of peers influence and provides the first evidence in the developmental peer relations literature of norm influence on early adolescents' popularity goal over time. This information may be applied to interventions to influence early adolescents' social goals and related social behaviors (Dawes & Xie, 2014).

The Risk of Pursuing a Popularity Goal

Is there a cost associated with pursuing a popularity goal? The answer to that question is as varied as the behaviors and characteristics associated with the controversial type of status itself. The desire for popularity status, like the desire for social dominance (see also agentic goals, Locke, 2000, 2003), is assumed to be universal. More concerning are the specific behaviors and characteristics that are often associated with popularity status. On the one hand, popular youth may be well-adjusted and mentally health individuals. For example, those adolescents accepted by their peers have been shown to have better self-images and also perform well in school (Hansen, Giacoletti, & Nangle, 1995; Savin-Williams & Berndt, 1990). These youth are also suggested to have higher social skills (Allen, Porter, & McFarland, 2005; Newcomb, Bukowski, & Pattee, 1993). Popularity status has also been shown to be linked with prosocial behaviors (Adler & Adler, 1998; Cillessen & Rose, 2005; Hawley, 2003), being perceived as a leader, and

being perceived as a good student (Farmer et al., 2003). Thus, pursuing a popularity goal may lead to positive developmental outcomes.

On the other hand, pursuing a popularity goal may lead to negative developmental outcomes. Popularity status has been linked with risky behaviors, drug use, social and physical aggression (Cillessen & Mayeux, 2004; Dawes & Xie, 2014; Mayeux, Sandstrom, & Cillessen, 2008; Xie, Li, Boucher, Hutchins, & Cairns, 2006). The risk for adolescents pursuing popularity is that the heightened need for acceptance may make adolescents agree to activities they may not normally engage in (Micucci, 1998; Sullivan, 1953). Thus, pursuing popularity status may put individuals at risk for engaging in these associated behaviors. Indeed, a recent report found that individuals pursuing a popularity goal used higher amounts of social aggression (Dawes & Xie, 2014). Similarly, valuing a dominance goal (which is conceptually similar to popularity goal, Caravita & Cillessen, 2012) has been shown to be linked with the use of alcohol and drugs (Lochman, Wayland, & White, 1993). Dominance goals were also linked to the use of maladaptive problem-solving styles, including relying more on physically and verbally aggressive strategies and having a limited capacity for negotiation (Lochman et al., 1993). Additionally, high valuing of a dominance goal was linked with low valuing for affiliation goals (Lochman et al., 1993). This evidence suggests that pursuing a popularity goal may be harmful on multiple levels; first, because of the associated risky behaviors; second, because of effects on problem solving strategies; and third, because pursuing popularity goal may take the individual away from pursuing more prosocial goals. Taken

together, it is important to consider how the adolescent pursues a popularity goal and their unique social situation during pursuit of that goal.

Results from this study may be extended to intervention work for early adolescence. For example, this study suggests that low status individuals in low popular groups may need carefully monitoring. Such youth may be more likely to engage in aggressive or risky behaviors in an effort to achieve their popularity goal. However, as was recently demonstrated, these low popular youth may be unsuccessful in their use of behaviors in pursuit of a popularity goal (Dawes & Xie, 2014). Attempts to achieve popularity may backfire and lead to social rejection which is related to serious negative consequences such as drug abuse, delinquency, aggression, and dropping out of school (Asher & Coie, 1990). This current study suggests an opportunity for a point of intervention for low status youth in low popular groups. In addition, low status youth in high popular groups with high peer group norms may also require careful monitoring. These youth are in popular groups and in their pursuit of a popularity goal, they may engage in risky behaviors such as increased sexual activity and drug use (Cillessen & Mayeux, 2004). Interventions may provide support for these individual by reinforcing more prosocial behaviors in pursuit of a popularity goal, by altering the school and classroom norms for behaviors associated with popularity status, and by seeking out opportunities to reinforce inclusive behavior by the group so that youth achieve the peer acceptance they seek (Hamm, Farmer, Dadisman, Gravelle, & Murray, 2010). By identifying the heterogeneity in youth's possible susceptibility to peer influence, the

findings from this study may be applied to more targeted intervention efforts that recognize the unique interactions between individuals and their peer groups.

Strengths and Limitations

This study provides a unique opportunity to explore group and individual level influences on an adolescent's popularity goal. A few of the study's strengths include the opportunity to study group level factors utilizing the SCM procedure. Additionally, to my knowledge, no studies have examined peer influences on adolescent's popularity goal, despite a growing understanding in research of the importance of popularity to adolescents (Adler & Adler, 1998; LaFontana & Cillessen, 2010). The current study also had the unique opportunity to assess adolescents' perceptions of popularity norms in the broader social network by asking them to describe the level of importance placed on popularity by peers at their school.

Despite these strengths, a few of the study's limitations warrant discussion. First, the popularity goal measure was assessed with a

. This may have compromised the psychometric properties of the measure. A multi-item measure of the construct should be created in future research to further investigate the implications of peer influence on a target adolescent's goal for popularity. Despite this limitation, the single-item measure of popularity goal remains a sensible and valid measurement. During early adolescents, youth are preoccupied with popularity (Adler & Adler, 1998) and prioritized popularity as a goal over other social goals such as pursuing a romantic relationship (LaFontana & Cillessen, 2010). The salience of

popularity status and the priority of the popularity goal indicate that the single-item is valid. Indeed, two recent studies using a single-item popularity goal measure yielded meaningful results (Dawes & Xie, 2014; Wright, Li, & Shi, 2012). Additionally, the popularity goal item maps on well to the measure of perceived popularity: both relate to peers' perceptions. The popularity goal item assessed the target adolescent's desire to be perceived as popular by peers and the perceived popularity measure assessed peers' perceptions of each adolescent. This direct match allows for meaningful interpretations of the relations between having a goal for popularity and popularity status.

A second limitation stems from the fact that some adolescents have membership in multiple groups. This dual membership presents challenges when attempting to identify the influence of the peer group: which group is more influential? For example, adolescents with dual membership in groups may be differentially influenced based on the group's status (i.e., whether the group is a "popular" group). For this study, I chose to focus on primary groups based on nominations with the assumption that greater interaction with a primary group may be a driving force in the socialization of popularity goal. However, future research could adopt a person-oriented approach to model the influence of respective peer groups in adolescents with dual membership.

Third, this study only focuses on the early adolescent time period. As such, this study does not speak to the influence of peers on a target adolescent's popularity goal at different developmental periods. For example, different types of peers aside from those in one's peer group may become influential. During middle adolescence, one's crowd

membership may influence adolescent's values (Rubin et al., 2008). Likewise, youth involved in romantic relationships, particularly during later adolescence, may be influenced by his or her romantic partner (Rubin et al., 2008). Future research should explore how youth are influenced by these different peers to create a comprehensive understanding of the socialization of popularity goal across adolescent development.

Lastly, this study only explores an adolescent's goal for popularity and does not assess other social goals. Research reveals that adolescents do endorse other social goals such as relationship goals and friendship goals (LaFontana & Cillessen, 2010; Massey, Gebhardt, & Garnefski, 2009). It would be interesting for future studies to explore how peers influence different types of social goals. However, given findings that early adolescents are preoccupied with popularity and prioritize it as a goal over other social goals, this study represents an important first step in the investigation of peer influence on what is a highly relevant and salience goal for early adolescents (Adler & Adler, 1998; LaFontana & Cillessen, 2010).

Despite these limitations, this study increases our understanding of how the adolescent's social context influences his or her personal goals. Much research has been dedicated to the study of peer influence on behaviors or attitudes (e.g., Berndt & Murphy, 2002; Prinstein, Brechwald, & Cohen, 2011; Dishion & Tipsord, 2011) and the study of goal may provide the missing link in helping researchers understand adolescent's different susceptibility to peer influence. Knowledge of this nature may then be

implemented in intervention efforts to reframe adolescent's social goals toward more positive outcomes.

Future Directions

This study provides an important foundation for future research exploring how peer group norms may influence social goals. This study suggests that there is variation in the extent to which individuals within a group are susceptible to influence from the peers within their own peer group. Future studies would benefit from studying the processes and mechanisms by which the peer group influences early adolescents. It is assumed that youth disclose their own desires or goals to other group mates; however, this assumption was not directly assessed in this study. More work is needed to address how adolescents learn about their peers' goals. For instance, do they observe their behavior and make inferences about the motives behind the behavior as they do with their perceptions of the popularity peer norm? Do they agree jointly on similar goals and strategies? Can social goals be reinforced through behavioral means? For instance, several studies suggest that group norms are maintained through a package of behaviors that include prosocial behaviors and aggressive behaviors (Adler & Adler, 1998; Dijkstra, Lindenberg, Verhulst, Ormel, & Veenstra, 2009; Hoff, Reese-Weber, Schneider, & Stagg, 2009). Understanding such links between adolescents' social goals, the goals of the peer group, and the strategies used to communicate and reinforce such goals has the potential to directly inform intervention and prevention strategies. This study demonstrates the importance of considering such peer group and perceived peer norm

processes in order to understand the socialization of popularity goal in the lives of early adolescents.

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