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Adolescents' perception of peer groups: Psychological, behavioral, and relational determinants

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ABSTRACT

Adolescents' social cognitive understanding of their social world is often inaccurate and biased. Focusing on peer groups, this study examines how adolescents' psychological, behavioral, and relational characteristics influence the extent to which they accurately identify their own and others' peer groups. Analyses were conducted with a sample of 1481 seventh- and tenth-grade Chinese students who are embedded with 346 peer groups. Overall, females and older students had more accurate perceptions. In addition, lower self-esteem, higher indegree centrality, and lower betweenness centrality in the friendship network predicted more accurate perception of one's own groups, whereas higher academic performance and lower betweenness centrality in the friendship network predicted more accurate perception of others' groups. Implications for understanding the connection between adolescents' psychological and behavioral traits, social relationships, and social cognition are discussed.

1. Introduction

How individuals perceive their surrounding social network structure has been an important concern in the networks literature. Studies have focused on examining individuals' recall of dyadic ties among members in their group, primarily from the Cognitive Social Structures (CSS) perspective (Brands, 2013; Krackhardt, 1987). Two major questions have been studied: first, how perceptions of network ties are related to individual traits as well as structural positions (e.g., Bondonio, 1998), and second, how accurate perception impacts outcomes such as effective organizational performance (e.g., Casciaro et al., 1999; Krackhardt and Hanson, 1993).

The current study addresses the questions pertaining to network perception in a population of Chinese adolescents. Children's social cognitive ability is related to their social functioning (Selman, 2003) and in particular, being able to perceive the structure of their social surroundings has important implications for adolescents' psychological and behavioral outcomes (Andreassi, 2004). Yet, adolescents' recall of social relationships is often biased (Cairns et al., 1998; Farmer and Xie, 2013; Leung, 1996). Perceptual bias has been identified in terms of viewing one's own network position (Neal and Cappella,

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2014) and level of social acceptance (Brendgen et al., 2004; Zakriski and Coie, 1996) as well as appraising the characteristics of the overall classroom network (Cappella et al., 2012).

This study focuses on peer group structure. The desire to belong to a valued social group is a key aspect of identity development in adolescence (Kroger, 2000; Tanti et al., 2011; Tarrant et al., 2001). Peer groups exert substantial influence on adolescents (Fletcher, 2012; Guo et al., 2009; Ueno, 2010; Vásquez, 2010), and how adolescents perceive these peer groups can influence their desire to belong to a given group or to interact with certain members of a group. Furthermore, given that perception is an underlying asset for social capital (Brands, 2013; Burt and Ronchi, 2007), adolescents who are able to accurately perceive the relationships they are surrounded by may be able to better mobilize resources to take advantage of their network. Despite the importance of peer group perception, not much is known about what explains adolescents' accurate or biased perception of peer groups. We suggest that adolescents' psychological, behavioral, or relational characteristics will correlate with their ability to accurately perceive peer groups. If such systematic relationships exist, certain people may be privileged with network advantage from having a better understanding of their social environment. In other words, while literature on social capital emphasizes resources that can be reaped from the social relations and structure one is embedded in (e.g., Bourdieu, 1986; Burt, 2004), an individual's cognitive perception of the social relations and structure around them could constrain their ability to benefit from social capital.

We focus on cognitive accuracy (Krackhardt, 1990), which is reflected in the extent to which a student's cognitive map converges with those of other students in the classroom. In particular, we distinguish between adolescents' accuracy with respect to peer groups in which the individual is a member (see Fig. 1: node *a*'s perception of peer group *A*) and those groups that do not include the individual (node *a*'s perception of all other peer groups, *B* - *I*). Social identity theory and self-categorisation theory (Turner et al., 1987) suggest that perception of ingroups and outgroups is related to adolescents' self-concept and self-esteem (Tanti et al., 2011). This study examines how perception of these ingroups and outgroups may be explained by individuals' psychological and behavioral traits as well as their social relationships.

2. Background and significance

2.1. Peer groups and friendships in adolescence

Social influence occurs not only within friendship dyads but also in larger social groups, and children's experiences in these groups are important. Adolescents seek a sense of belonging, and feel isolation when they are not included in peer groups (Tarrant et al., 2001; Ueno, 2005). Examination of these social groups allows us to understand various aspects of social ecology such as leadership, status, popularity, rejection, and group influence (see Cairns et al., 1998 for a review). Examining peer groups vis-a-vis friendship has been a focus of research, in particular in asking how dyadic friendships overlap with or diverge from larger group structures (Cairns et al., 1995; Kindermann, 2007). Overall, these studies suggest that peer groups and friendships are different types of relationships, and peer groups involve unique dynamics and are an important driver of social identity formation and social influence for adolescents.

Two major approaches have been used to identify children's groups. First, groups can be derived from self-reported friendship ties. Groups are identified via graph algorithms (see Moody, 2001 for a review), generally focused on finding a set of people that have more ties within the members of the group than with those outside of the group (e.g., Borgatti et al., 2002; Frank, 1995). An alternative approach is to ask respondents to identify the groups that they perceive to exist and to list the members of these groups (Gest et al., 2007; Kreager et al., 2011). A widely used method for accomplishing this is the social cognitive mapping (SCM) technique developed by Cairns and his colleagues (Cairns et al., 1990, 1998). Using this method, respondents are first asked about the membership of the group within which they are a member, and then to identify the membership of up to five other groups. SCM places emphasis on identifying groups of individuals who interact and spend time together rather than identifying groups based on dyadic friendship ties (e.g., Pollard et al., 2010).

Since a majority of social network analysis (SNA) studies rely on self-reports, accuracy of network perception has been an important concern. Starting from the classic studies (e.g., Bernard and Killworth, 1977; Bernard et al., 1979, 1982; Freeman et al., 1987) that compared individuals' recall against actual observation of behavioral interaction, researchers have emphasized that individuals' perception of networks is often inaccurate and biased. With the introduction of the CSS approach (Krackhardt, 1987), a stream of research examined the extent to which individuals' recall converges with the perception of others in the same social group or organization (e.g., Bondonio, 1998).

We adopt the latter perspective and define perception accuracy as the extent to which groups named by a student converge with the final groups derived by the SCM procedure. Although there is no uncontestable “truth” about which students are in which groups, SCM is designed to capture the full community's consensus perception about groups.[1] Such aggregated perception has been considered as an “actual structure” (Bondonio, 1998, p. 303) or “underlying truth” (Krackhardt, 1987, p. 118) against which individual reports are compared. We use this consensus perception even for

[1] The SCM procedure that we used aggregates the reports of all classmates with a minimum of two respondents required to indicate that someone is a member of a group before that individual is identified as a member. This controls for the possibility that children could be identified as a group member based solely on their self-report.