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Exploring Negative Group Dynamics

Adversarial Network, Personality, and Performance in Project Groups

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Most previous social network studies have focused on the positive aspects of social relationships. In contrast, this research examined how the negative aspects of social networks in work groups can influence individual performance within the group. Accordingly, two studies were conducted to make this assessment. The first study examined the effect of negative relations and frequency of communication on performance among student groups. The second study investigated how the Five Factor Model of personality and position in adversarial networks interacted to influence individuals’ performance. Although results of the first study indicated that frequent communication with others could make a person more likeable, consequently helping him or her perform better, the second study showed that those individuals disliked by others were less likely to achieve a good performance rating, despite their conscientiousness, emotional stability, or openness to experiences.

Keywords: adversarial network; groups; peer relationships; personality; personhood

Groups have been widely recognized as the key organizing unit in contemporary organizations (Argote, 1999; Arrow & McGrath, 2000), partially because group work promises wider access to new information and a greater pool of diverse expertise. However, not all groups collaborate effectively (Peeters, Rutte, Van Tuijl, Harrie, & Reymen, 2006). Negative social interactions commonly arise when group members offer “neither valued information and insights, nor support and fun” (Klein, Lim, Saltz, & Mayer, 2004, p. 955). This results in the formation of “adversarial relationships” (Klein et al., 2004; Yang & Tang, 2003) that are likely to cause
emotional distress, anger, or indifference between group members. Although studies of communication networks have made significant contributions in improving our understanding of how social relationships influence group dynamics (Monge & Contractor, 2003), most social network studies have, to date, focused on the positive aspects of social networks and examined what resources people can obtain from their network relationships to facilitate job search, early promotion, and better performance (Burt, 2000). Few studies have reported the negative consequences of social relationships (Adler & Kwon, 2002; Portes, 1998).

Although adversarial relations have been rarely discussed in comparison with other types of social networks (e.g., friendship, communication, advice, and work-flow networks), more scholars have come to realize the strong detrimental influence of adversarial relations on group collaboration, as well as individual and group performance (Emirbayer & Goodwin, 1994; Sparrowe, Liden, Wayne, & Kraimer, 2001). For instance, Rozin and Royzman (2001) hypothesize that both animals and humans are more biased toward negative entities (e.g., events, objects, personal traits) than positive ones. Similarly, Brass and Labianca (1999) proposed that negative ties, defined as social liabilities (the opposite of social capital), may play a bigger role than positive ties in influencing organizational dynamics in that negative events may “elicit greater physiological, affective, cognitive, and behavioral activity and further lead to more cognitive analysis than neutral or positive events” (p. 325). In work groups, however, such negative relationships are difficult to avoid because in many situations, they are tied to organizational hierarchy or job assignment (Labianca, Brass, & Gray, 1998). Therefore, more research on negative relationships in work groups is warranted to facilitate our understanding of group dynamics.

Despite its importance, existing research on adversarial network ties is scarce. Among the few studies that actually examined the effect of negative ties on group dynamics, the significance of the findings has been greatly compromised as a result of oversights in conceptualization. For instance, in

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previous studies about the relationship between adversarial network centrality and performance (Baldwin, Bedell, & Johnson, 1997; Yang & Tang, 2003), the researchers either examined the in-degree centrality, while neglecting out-degree centrality in adversarial networks, or they did not distinguish in-degree from out-degree centrality at all. In network terminology, in-degree centrality measures the number of network links that a focal node receives as reported by other group members in the network (Scott, 2000). Out-degree centrality, on the other hand, also measures the number of ties that a focal person has, but from the focal person’s perspective. When studying adversarial relationships in a group, we believe that a clear distinction between the two types of centrality measures should be made, both substantively and empirically, because “disliking others” and “being disliked by others” elicit different dynamics in social interaction with different outcomes in terms of individual work and group performance. To address this limitation found in existing studies, the first objective of our research investigates how in-degree and out-degree centralities in adversarial ties exert a differential effect on individual performance and satisfaction with group experiences.

A second objective of this research is to investigate what factors lead to a person’s position in adversarial networks and how these factors will interact with a person’s position in adversarial networks to ultimately influence performance. Mehra, Kilduff, and Brass (2001) propose that scholars engaged in social network research should give more attention to the origins of network positions and how a person’s position in such networks is influenced by individual characteristics. In response to this call, we investigated two possible factors that may influence how certain individuals end up in central positions in adversarial networks, namely, frequency of communication and Thurstone’s (1934) Big Five personality traits, otherwise known as the Five Factor Model (FFM), which includes extraversion, agreeableness, conscientiousness, emotional stability, and openness to experiences.

Finally, this research aims to extend the scope of existing adversarial network studies by studying the influence of personality variables and network positions on performance. Previous social network studies have been conducted to test the relationship between individuals’ positions in social networks and performance at both the individual and group levels (e.g., Sparrowe et al., 2001) without, however, considering why people occupy these positions. A separate stream of research has been conducted to examine the relationship between personality traits and job performance (e.g., Salgado, 1999) but without providing a clear explanation about why, in group settings, some otherwise desirable personality traits do not contribute to better individual performance. Overall, investigators have, to a large
extent, ignored how the confluence of personality traits and social network positions interact to ultimately influence work performance (Mehra et al., 2001). They have, moreover, tended to focus exclusively on positive social networks. Therefore, in this research, we will explore how the Big Five personality traits may interact with adversarial network positions to influence individuals’ performances.

Our research involves two studies. The first study examined how in-degree and out-degree centrality in adversarial networks influenced frequency of communication, individual performance, and satisfaction with group work. The primary goal of the first study was to address the first two objectives of this research as outlined above, that is, addressing the oversights in previous research on adversarial networks and exploring factors that may influence a person’s position in an adversarial network. Building on the findings from the first study, the second study explored how personality traits, in addition to frequency of communication within teams, as examined in Study 1, would influence a person’s position in an adversarial network. In addition, we also examined how personality traits interacted with team members’ positions in adversarial networks such that individuals’ performances are ultimately affected. Our article ends with a discussion of practical implications for managing project groups in organizations.

Study 1: Adversarial Network, Frequency of Within-Group Communication, and Performance

In-Degree Versus Out-Degree Centrality in Adversarial Networks

Baldwin et al. (1997) studied how network structures relate to performance outcomes and members’ satisfaction toward team effectiveness using a sample of 250 MBA students. At the individual level of analysis, they found that centralities in friendship, communication, and adversarial networks were related to both students’ grades and their attitudes. As mentioned above, one limitation with their study, however, was that they treated adversarial relationships as symmetrical and bidirectional. In-degree centrality measures the number of network links that a focal node receives as reported by other group members in the network. Out-degree centrality, on the other hand, also measures the number of ties that a focal person has, but from the focal person’s perspective (Scott, 2000). As noted and illustrated above, however, adversarial relationships may not be symmetrical. Therefore, the in- and out-degree centrality of the adversarial network should be differentiated.
In-degree centrality of an adversarial network counts only the number of adversarial relationships with the focal individual as reported by other group members. Because this measurement reflects the extent to which the focal student is disliked by his or her group members, we believe that it is a better predictor of individual performance than the symmetrized centrality in an adversarial network, in particular for groups working on interdependent tasks where each member depends on others for advice and assistance. Therefore, as the in-degree adversarial relationships increase for a given focal person, the ability of that focal person to gain the necessary resources to achieve good performance becomes increasingly difficult. Sparrowe et al. (2001) investigated friendship, advice, and hindrance networks in a sample of 47 work groups. In this study, they specifically emphasized the important role that in-degree centralities played on individuals’ job performances. As predicted, the authors found that individual job performance was positively related to in-degree centrality in the advice network but negatively related to the in-degree centrality in the hindrance network. Based on this reasoning and the results from similar empirical research, we propose the following:

**Hypothesis 1:** In-degree centrality in the adversarial network will negatively affect individuals’ performances.

In addition to performance, understanding how group members become satisfied with their group is very important for studying group experiences because positive affect, as reflected in group satisfaction, has the potential to influence motivation and performance (Brief & Weiss, 2002). Peeters et al. (2006) maintained that, if individuals are dissatisfied with their group, they will develop negative attitudes toward group tasks. This can lead to decreased effort when working with groups in the future. Lester, Meglino, and Korsgaard (2002) also found significant associations between group satisfaction and group effort, as well as between group effort and final performance ratings. Peeters et al. (2006) found that individual satisfaction with group work was related “either to the team members or the team’s composition or to the way team members worked together during the project” (p. 189). In other words, if individuals feel comfortable with either the team members or the degree of cooperation within the team, they will be satisfied, and as a consequence, they will be more motivated to work with teams in the future.

Taking a network approach, Baldwin et al. (1997) directly examined the association between group members’ interrelationships and their overall satisfaction with group effectiveness. The results revealed that the adversarial network centrality was negatively associated with satisfaction with teams and
the overall program. Similar to other studies, their study was limited because the in- and out-degree centralities of the adversarial network were not differentiated. We argue that out-degree centrality should replace symmetrical and bidirectional adversarial network centrality to predict the satisfaction levels that individuals hold toward their group experiences. Out-degree centrality in adversarial networks reflects the negative evaluation that individuals have about others. As such, it is a more accurate predictor of group satisfaction because when group members report disliking many of their group members, such negative evaluation can greatly influence their own effectiveness within the group, as well as their enjoyment and satisfaction within the group. Accordingly, the following is hypothesized:

**Hypothesis 2:** The out-degree centrality of the adversarial network will negatively affect the individual satisfaction of their group experience.

*The Effect of Frequency of Communication*

To explore why certain group members occupy central positions in adversarial networks, the first study focused on profiling people by frequency of communication. Frequent communication among group members provides opportunities for people to learn about each other’s objectives, work progress, and needs. Although it is not guaranteed that people will like each other when they communicate more, frequent interpersonal communication does make it easier to resolve conflicts and reduce intergroup anxiety (e.g., Pelled, 1996; Stephan & Stephan, 1988). In addition, the more frequently individuals communicate with other group members, the more likely they are to be regarded as hardworking and highly motivated by their peers. Because highly motivated people with a good work ethic are more likely to be respected in the work group than those who are careless and indifferent toward others, we expect that individuals who communicate more frequently with group members will be less likely to take the central position in adversarial networks.

**Hypothesis 3:** Frequency of within-group communication will be negatively related to the in-degree centrality in the adversarial network.

In addition, communication among group members is also very important for a group to accomplish its tasks successfully. In their study on the effect of network relations on group performance, Baldwin et al. (1997) found that communication within MBA student teams was directly and strongly associated with perceptions of team effectiveness. To explain this finding, the authors note that frequent communication embeds individuals
within a communication network in a way that keeps them informed about essential details, for example, the quirks of certain professors or changes in assignments. Following a similar line of reasoning, we expect that the more frequently an individual communicates with his or her teammates, the better the quality and quantity of information and assistance he or she will gain. To the extent that this information and assistance are beneficial for group members, we expect a positive relationship between the frequency of communication and an individual’s performance.

_**Hypothesis 4:** Frequency of communication with group members will positively affect individuals’ performances._

Finally, Baldwin et al. (1997) also discovered that individual centrality in the communication network was positively associated with perceptions of learning and enjoyment of their MBA educational program. The reason is that communicating with other group members may provide access to valuable information, which will, in turn, reduce individuals’ uncertainty toward, and ambiguity surrounding, group tasks. Moreover, communicating with group members may enhance mutual understanding, group morale, and/or group homogeneity (Katz, 1982). We therefore expect that the more frequently individuals communicate with their group members, the more likely they are to be satisfied with their group experience.

_**Hypothesis 5:** The frequency of within-group communication will positively affect individuals’ satisfaction with their group experience._

**Method**

**Sample**

The sample for our study was made up of university students enrolled in an undergraduate human–computer interaction class in a large northeastern university in the United States. These student groups were similar to groups in real organizational settings in many ways. For example, the team project lasted about 4 months, giving participants adequate time to form working relationships. Also, the level of difficulty of the assigned tasks was equal to that of an actual workplace and required the same type of intensive collaboration. None of the authors was the instructor of the class, and the class contents were unrelated to this study. At the beginning of the semester, students were informed that they were invited to participate in a research study on group participation. Those who chose to participate could receive extra credit toward their final grade.
Altogether, 56 out of 60 students volunteered to participate in this study, resulting in a participation rate of 93.3%. Seven students failed to provide complete data and were therefore removed from the analysis. This resulted in a final sample of 49 students. Students were assigned to small groups at the beginning of the semester based on instructors’ understanding of their common interests and goals for this course (the 4 students who did not choose to participate were assigned into one group and were excluded from the study). There was a total of 13 groups, and the group size ranged from 3 to 5 students. Students stayed in the same group throughout the semester to finish a semester-long project. After finishing their final group presentations, students were sent the URL of an online survey via e-mail. They were expected to finish all the survey questions within half an hour. Students received their final scores after they finished the online survey. The survey included questions on students’ feelings of closeness, frequency of communication, and feelings of satisfaction with the group experience. Our sample included 46.9% female and 53.1% male students. Students came from various disciplines, including, for example, communication, information science, and computer science.

**Measures**

**Adversarial network.** The adversarial network data were measured using an adapted version of the scale used by Burt (1992). Students were asked to identify those group members whom they felt close to and those they would avoid. To accomplish this, the students were provided an alphabetized list of all their group members and asked to report how they felt about each of them. In our scale, 1 represented *especially close (one of the respondent’s closest contacts)* and 5 represented *distant (avoid contact unless necessary)*. Both in-degree and out-degree centralities of the adversarial network were computed following Freeman’s (1979) definition, which has been implemented in the UCINET 6.0 software package (Borgatti, Everett, & Freeman, 2002). The higher the in-degree score individuals received, the more they were disliked by group members. On the other hand, the higher the out-degree score individuals received, the more they disliked other group members. To control for the influence of differences in group sizes, normalized degree centralities, which vary from 0 to 100, were used for data analysis.

**Frequency of communication.** Students were asked to report their frequency of communication with other group members when facing problems related to the group project (e.g., problems in design, research, computer skills, or programming). The frequency of communication with group
members was measured by a 5-point scale with 0 meaning never and 4 meaning very often (more than 10 times a week). Because students sometimes recalled the actual frequency of communication with one another differently, the mean of these self-reported data from two students was calculated to represent the actual frequency of communication between these two students. The resulting centrality data were also normalized to vary from 0 to 100 to control for differences in group size (Borgatti et al., 2002; Sparrowe et al., 2001). The higher the degree centrality an individual received, the more frequently he or she discussed project-related issues with group members.

**Individual performance.** This variable was measured by the individual’s final percentage grade. Group members may receive different grades because of peer evaluation as well as instructors’ evaluation of their lab performance.

**Group satisfaction.** This variable was measured using a multi-item scale asking students to report their satisfaction with the group process, as well as the final output. Five-point scales were used for each of the items, with 1 indicating extremely dissatisfied and 5 extremely satisfied. The Cronbach’s (1951) alpha for the multi-item scale was .92.

**Results**

Because our participants were clustered by groups and were therefore not completely independent, running regular regression tests on the raw data would not be appropriate (Snijders & Bosker, 1999). However, we could not conduct a robust multilevel analysis to model the grouping effect because the small sample size at the group level was not sufficient to obtain reliable estimates of group-level effects (Hox, 1998; Snijders & Bosker, 1999). As an alternative strategy, we chose to remove the grouping effect from our data. Following the recommendation from Raudenbush and Bryk (2002), we group-mean-centered the variables prior to running analyses because our focus was on examining relationships at the individual level of analysis, not on studying cross-level interactions or across-group differences in means. When the data are group-mean-centered, the grouping effect of the data has essentially been removed (Kreft, Leeuw, & Aiken, 1995). Table 1 shows the descriptive statistics and zero-order correlations among study variables.

Because the dependent variables for Hypotheses 1 and 4 were the same, multiple regression analysis was used to test the two hypotheses simultaneously. Table 2 shows the results of the analysis with individual performance
as the dependent variable. In Step 1 of our analysis, adversarial in-degree centrality showed a significant effect on performance when it was entered into the regression alone (β = –.35, \( p < .05 \), \( R^2 = .12 \)). However, its influence on performance became insignificant (β = –.18, \( p > .05 \)) when frequency of within-group communication (β = .43, \( p < .01 \)) was entered in Step 2 of the multiple regression (\( R^2 = .28 \)). Thus, Hypothesis 1 was not supported, whereas Hypothesis 4 was supported. Overall, the results suggest that being disliked by group members was not found to be significantly detrimental to an individual’s performance; however, frequency of communication with group members did seem to play a more important role in determining an individual’s performance.

Hypothesis 3 predicted that individuals who communicate more frequently with group members would be less likely to take the central position in adversarial networks. This hypothesis was supported by the significantly negative coefficient between frequency of within-group communication and the in-degree centrality of the adversarial network (\( r = –.39, p < .01 \)), as shown in Table 1.

As Hypotheses 2 and 5 had the same dependent variable, multiple regression analysis was used to test the two hypotheses simultaneously, as previously described. Table 3 summarizes the results of this multiple regression analysis with group satisfaction as the dependent variable. In Step 1 of our analysis, adversarial out-degree centrality showed a significant effect on group satisfaction when it was entered into the regression

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### Table 1

Descriptive Statistics and Correlations for Study Variables (\( N = 49 \))

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>( M )</th>
<th>( SD )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adversarial in-degree centrality (scale: 0-100)</td>
<td>64.5</td>
<td>13.5</td>
<td>—</td>
<td>–.44**</td>
<td>–.39**</td>
<td>–.35*</td>
<td>.35</td>
</tr>
<tr>
<td>2. Adversarial out-degree centrality (scale: 0-100)</td>
<td>64.5</td>
<td>22.0</td>
<td>—</td>
<td>–.14</td>
<td>–.08</td>
<td>–.39**</td>
<td></td>
</tr>
<tr>
<td>3. Frequency of communication (scale: 0-100)</td>
<td>76.3</td>
<td>10.6</td>
<td>—</td>
<td>.50**</td>
<td>–.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Individual performance (scale: 0-100)</td>
<td>92.2</td>
<td>9.2</td>
<td>—</td>
<td></td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Group satisfaction (scale: 1-5)</td>
<td>3.9</td>
<td>0.9</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

*Correlation is significant at the .05 level (two-tailed).

**Correlation is significant at the .01 level (two-tailed).
alone (\(\beta = -0.39, p < .01, R^2 = .15\)). Its influence on satisfaction remained significant (\(\beta = -0.41, p < .01\)) when frequency of within-group communication (\(\beta = -0.13, p > .05\)) was entered in Step 2 of the multiple regression (\(R^2 = .17\)). Therefore, Hypothesis 4 was supported, but Hypothesis 5 was not. The liking or disliking of group members was the most important factor for determining individual satisfaction with the whole group. Overall, three out of five hypotheses were supported in the first study. In addition to \(R^2\), other statistics measuring strength of association were also calculated. Following the procedure described by Cohen (1988), the \(f\) statistic was calculated for each regression analysis, along with its corresponding power. For supported hypotheses, the effect size ranged from .28 to .81 and the achieved power ranged from .81 to .95.

In summary, Study 1 examined the effect of negative relations and frequency of communication on performance and satisfaction among 13 groups of students. Results show that group members were less likely to feel satisfied with the group process when they disliked others but that frequent communication with others could make a person more likeable and thus help him or her perform better.

### Study 2: Adversarial Network, Personality, and Performance

In the second study, we shifted our focus to how personality traits may influence group members’ positions in adversarial networks and how personality traits interact with positions in adversarial networks to influence performance. Personality disposition theories in psychological research maintain...
that individual differences in personality can explain a wide range of human behavior, albeit to varying degrees (Kalish & Robins, 2006). Some of the personality constructs, including, for example, extraversion or self-monitoring tendency, are found to be relatively stable over time and are therefore called personality trait characteristics (Allport, 1962). When studying the effect of personality traits on job performance, many scholars have adopted the FFM of personality (e.g., Digman, 1990; Goldberg, 1992). The model has achieved widespread acceptance in personality studies (Barrick, Parks, & Mount, 2005). These five factors include extraversion (sociable, gregarious), agreeableness (helpful, trusting), conscientiousness (dependable, hardworking), emotional stability (tolerant, even-tempered), and openness to experiences (imaginative, curious).

Barrick, Mount, and Judge (2001) summarized 15 existing meta-analyses about the relationship between personality traits (FFM) and job performance. Their results showed that conscientiousness and emotional stability are two consistent predictors of overall job performance. The other three traits (extraversion, openness, and agreeableness) can be significant predictors only in specific occupations. In network studies, these personality traits were also found to significantly affect individuals’ likelihood of filling structural holes in social networks (e.g., Burt, Jannotta, & Mahoney, 1998; Kalish & Robins, 2006), having an accurate perception of network relationships (e.g., Casciaro, 1998), or developing a larger ego’s network and fostering larger numbers of strong and weak ties (Kalish & Robins, 2006).

Although few studies to date have investigated how the Big Five might influence individuals’ positions in adversarial networks, the work of Klein et al. (2004) is an exception. Although they did find significant relationships between some personality traits and centrality in adversarial

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
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<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adversarial out-degree centrality</td>
<td>−0.02</td>
<td>0.01</td>
<td>−0.39**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adversarial out-degree centrality</td>
<td>−0.02</td>
<td>0.01</td>
<td>−0.41**</td>
</tr>
<tr>
<td>Frequency of within-group communication</td>
<td>−0.01</td>
<td>0.01</td>
<td>−0.13</td>
</tr>
</tbody>
</table>

**p < .01.
networks, their results only appeared to be “promising and cautionary” (p. 960) because some of the findings turned out to be very surprising, or even contrary, to the authors’ predictions. Specifically, four of the Big Five personality traits (all except conscientiousness) were found to be correlated with adversarial network centrality, but two of those four significant ones (extraversion and openness to experiences) were in the opposite direction from their predictions. This implied that as an individual’s extraversion and openness to new knowledge increase, the more likely it is that he or she is going to be disliked by teammates. The results contradicted not only generally expected norms but also the original predications of the authors. The authors explained their controversial results by suggesting that “at close range and with repeated interaction, a teammate’s openness (non-conformity, autonomy, and intellectualism) and extraversion (talkativeness, attention seeking, assertiveness) may be a source of annoyance” (p. 961).

Although their explanation may be valid, it still does not convincingly explain why, or under what conditions, a person who is otherwise extroverted or open to different experiences would, in fact, be considered central within the adversarial communication network. Moreover, the substantial unexplained variance (e.g., personality traits only explained around .04 of the variance of adversarial centrality) in this study also indicates a need for further empirical validation of their arguments and results. Therefore, we used a different research context, the work group project model, to reexamine the relationship between the Big Five and adversarial network centrality.

We hypothesized that there would be a negative relationship between each of the five personality traits and the adversarial network centrality. First, conscientiousness should correlate negatively with in-degree centrality in adversarial networks because people who score high in this trait are usually industrious and responsible. They also tend to care more about group work. Their diligence will, in turn, gain the cooperation and respect of their peers. It is therefore reasonable to hypothesize that people who are high in conscientiousness will stand less chance of being disliked.

Hypothesis 6a: Conscientiousness is negatively related to adversarial network centrality.

Individuals who score high in the trait of agreeableness are polite and good-natured. Peers may find it easy to communicate and cooperate with them. Similarly, individuals who score high in emotional stability are tolerant and even-tempered; they are also less likely to be disliked by their peers.
Hypothesis 6b: Agreeableness is negatively related to adversarial network centrality.

Hypothesis 6c: Emotional stability is negatively related to adversarial network centrality.

Individuals who score high in the trait of extraversion are good at social interaction and expressing personal ideas and beliefs. Therefore, they will facilitate the group process and help improve intragroup communication. They will also be less likely to occupy the central position in the adversarial network.

Hypothesis 6d: Extraversion will be negatively related to adversarial network centrality.

Last, individuals who score high in openness to experiences will be creative and imaginative in their work. They will also endeavor to search for information and resources with which to solve group tasks. Accordingly, these behaviors will be welcomed by their peers.

Hypothesis 6e: Openness to experiences will be negatively related to adversarial network centrality.

The Interaction Effect of Personality and Adversarial Network Centrality on Performance

Another purpose of this case study is to explore how in-degree centrality in adversarial networks interacts with personality traits to influence performance. Research in social psychology has found that personality traits are predictors of performance (e.g., Salgado, 1999). For example, conscientiousness has been found to be a robust personality trait that reliably and positively correlates with performance across all jobs and settings. Similarly, emotional stability has also been shown to have a positive and consistent relationship with overall performance (e.g., Barrick et al., 2001), regardless of differences in job situations. The other three personality traits (extraversion, agreeableness, and openness to experiences) are “contingent predictors,” because “their relevance depends on the demands of the job” (Barrick et al., 2005, p. 748). Specifically, agreeableness and extraversion will be important predictors whenever job performance requires the need to influence others and/or cooperate with them. Moreover, openness to experiences will be a good predictor for performance when the job requires training or creative problem solving (Barrick et al., 2001; Barrick et al., 2005; Hogan
& Holland, 2003); however, investigators have yet to account for a marked variance in the personality–performance relationship where “there are other individual difference variables or external conditions that moderate the relationship between personality traits and performance” (Barrick et al., 2005, p. 745).

For years, psychologists have been investigating the possible moderators like autonomy (Barrick & Mount, 1993) and self-monitoring (Barrick et al., 2005), which may influence the relationship between the Big Five and job performance across different job categories. Based on the previous discussion about adversarial network centrality and individuals’ performance, we therefore propose that an individual’s in-degree centrality in adversarial communication networks may serve as one other possible external factor that does, in fact, moderate the relationship between the Big Five personality variables and individual performance.

Weiss and Adler (1984) pointed out that personality traits can be good predictors of performance when a person’s behavior is unconstrained. We note that both the work environment and personal characteristics may either potentially facilitate or constrain the behavioral expression of an individual’s personality traits (Barrick et al., 2005). For instance, an extroverted member may talk less when surrounded with introverted coworkers; on the other hand, this same member, feeling less constrained, may have cause to talk more when surrounded by similar individuals. In practical terms, being disliked by peers will produce strong constraints on individuals’ behavior in a workplace environment that requires a high degree of group cooperation. For instance, an individual may be cut off from the normal information flow (e.g., Baldwin et al., 1997) as a result of poor relationships and will therefore be constrained from cooperating optimally in that workplace. Relating this to the influence of adversarial (i.e., negative) relationships on task-related outcomes, Labianca and Brass (2006) claimed that one or both individuals involved in an adversarial relationship might, for instance, potentially deny the other party timely access to the most relevant work-related information or referral. More important, being disliked by coworkers could also result in negative peer evaluations of work performance, which could tarnish that individual’s reputation in the organization. As a result, other task-related outcomes, such as promotions or income attainment, would also be significantly affected by the fact that the individual is disliked by coworkers.

Yet, most existing research treating the influence of personality on performance in groups only assumes, but does not empirically test, whether a bad peer relationship may also cause bad performance. To address this
issue, this study aims to extend existing research on the personality–
performance relationship by incorporating research findings from the study
of adversarial relations. We believe that the results will more clearly
explain why and how personality influences individual performance
in groups. Specifically, as suggested above, we want to explore whether
individuals’ centralities in an adversarial network will moderate the
relationships between the Big Five personality traits and individuals’
performance.

The fundamental premise assumes a group-based project that demands a
high level of cooperation and teamwork. The premise further contends that,
in such an environment, those disliked by their coworkers will find them-

Hypothesis 7a: The relationship between conscientiousness and individuals’
performance will be stronger when individuals’ degree of centrality in
the adversarial network is low.

Hypothesis 7b: The relationship between agreeableness and individuals’
performance will be stronger when individuals’ degree of centrality in
the adversarial network is low.

Hypothesis 7b: The relationship between agreeableness and individuals’
performance will be stronger when individuals’ degree of centrality in
the adversarial network is low.

Hypothesis 7b: The relationship between agreeableness and individuals’
performance will be stronger when individuals’ degree of centrality in
the adversarial network is low.
**Hypothesis 7c:** The relationship between emotional stability and individuals’ performance will be stronger when individuals’ degree of centrality in the adversarial network is low.

**Hypothesis 7d:** The relationship between extraversion and individuals’ performance will be stronger when individuals’ degree of centrality in the adversarial network is low.

**Hypothesis 7e:** The relationship between openness to experiences and individuals’ performance will be stronger when individuals’ degree of centrality in the adversarial network is low.

**Method**

**Sample**

Similar to the first study, the sample in the second study was made up of 42 students (46.9% female and 53.1% male students) enrolled in a graduate-level software engineering class in the same university. Some of the students were 4th-year undergraduates, whereas the rest were students at the graduate level pursuing master’s degrees. Again, the class content had nothing to do with this study and none of the authors was the course instructor. The study was designed as a part of the course requirements for the class. Participants formed project groups by themselves at the beginning of the semester, with group size ranging from 4 to 7 students, and participants remained in the same group throughout the entire semester. We gathered adversarial network and Big Five personality traits data after the students finished their project presentation. Consistent with Study 1, students received their final score after they finished the online survey.

**Measurement of Research Variables**

**Network data.** The same question used in the first study was asked to collect complete social network data from 42 students (using a 5-point scale, with 1 representing especially close and 5, distant, avoid contact unless necessary). Consistent with previous research (e.g., Kalish & Robins, 2006; Mehra et al., 2001), we computed in-degree centrality scores for each participant within his or her own group to allow for comparisons across different groups (Borgatti, Everett, & Freeman, 2002; Sparrowe et al., 2001). To control for the influence of differences in group sizes, normalized degree centralities, which vary from 0 to 100, were used for analysis.

The Big Five personality traits were measured using the International Personality Item Pool (Goldberg, 1992), which is a 50-item instrument with 10 items for each factor of the FFM. The Web site (accessible at http://ipip
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.ori.org/ipip/ipip.html) provides open access to the full battery of questions. Each item was measured on a 5-point scale with 1 representing strongly disagree and 5, strongly agree. Compared with the standard multi-item instrument of the Big Five personality traits, the shorter version of the 10-item inventory was somewhat inferior. However, Gosling, Rentfrow, and Swann (2003) concluded that the instruments reached adequate levels in terms of (a) convergence with widely used Big Five measures in self, observer, and peer reports, (b) test–retest reliability, (c) patterns of predicted external correlates, and (d) convergence between self and observer ratings. The Cronbach’s alpha of the Big Five personality measurement ranged from .89 to .92 in this study, demonstrating very high scale reliability across the five personality dimensions.

Individual performance was measured by the individual’s final grade. The instructors took into account individuals’ performance in class, group project assignments, final group project presentation, and final project paper.

Measurement of Control Variables

In addition, we measured and included two more variables, previous work experience and the number of group members with whom participants had previous working relationships, in the analysis of our data to control for possible confounding effects on the relationships among key research variables.

Previous work experience was controlled in this study because people with extensive professional work experience may know more about the importance of teamwork and may therefore be more likely to self-monitor individual behavior when working in groups. Depending on the extent to which people would consciously monitor their own behavior, this, in turn, could skew how personality traits affect centrality in adversarial networks. Therefore, we asked students to report their previous work experience. The responses were dummy-coded with 1 representing having worked in the professional computing industry and 0 representing no previous work experience.

Number of group members worked with before was another control variable in our study. Because students self-organized into groups, we assumed that some of them may have known each other prior to the class through other classes or social events. This factor could change individuals’ behavior when communicating with group members. For example, the experience of interacting with past coworkers may help individuals to use certain communication strategies to avoid conflicts. We also provided
the students with an alphabetized list of all their classmates and asked them to identify the one(s) with whom they worked before.

Analysis

To test our hypotheses, five multiple regression analyses were conducted. First, the variables of previous professional work experience and team work experience with classmates were entered into the model to control for possible confounding effects. Next, personality traits were entered into the program to test Hypotheses 6a to 6e. Finally, Hypotheses 7a to 7c were tested by entering the interaction terms (the product of personality trait and in-degree adversarial centrality after mean-centering) into the model. For the same reason we discussed in the first study, prior to running the regression analysis, we group-centered our independent variables because our data were clustered by groups; people in the same group were more likely to (a) dislike similar others and (b) receive a similar grade when the group project was a key component for performance evaluation.

Results

The in-degree centrality of the adversarial network was computed following the definition of Freeman (1979), as implemented in the UCINET 6.0 software package (Borgetti et al., 2002). Table 4 shows the descriptive statistics and zero-order correlations among study variables.

Hypotheses 6a to 6e predicted negative relationships between the adversarial network centrality for each of the personality traits. Table 5 shows the testing results. After controlling for the influence of previous work experience, as well as the number of group members designated as prior coworkers, emotional stability was found to be negatively and significantly related to adversarial network centrality ($\beta = -0.33, p < .05$). Openness to experiences was also found to be significantly related to adversarial network centrality ($\beta = -0.35, p < .05$ with the achieved power of .50). Agreeableness ($\beta = -0.12, p > .05$) and extraversion ($\beta = -0.25, p > .05$) were negatively correlated with adversarial network centrality, but no statistical significance was found in the regression analysis when controlling for the influence of previous work experience and the number of group members designated as prior coworkers. Conscientiousness was found to be very weakly, but positively, correlated with adversarial network centrality ($\beta = 0.09, p > .05$); however, the result was not significant. Therefore, Hypotheses 6c and 6e were supported, whereas the remaining three were not.
<table>
<thead>
<tr>
<th>Variable Name</th>
<th>$M$</th>
<th>$SD$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Previous work experiences</td>
<td>0.50</td>
<td>0.51</td>
<td>—</td>
<td>−.17</td>
<td>−.12</td>
<td>.46**</td>
<td>.37*</td>
<td>.37*</td>
<td>.38*</td>
<td>.44**</td>
<td>.14</td>
</tr>
<tr>
<td>2. Number of group members worked with before</td>
<td>3.05</td>
<td>1.68</td>
<td>—</td>
<td>−.32*</td>
<td>.19</td>
<td>.25</td>
<td>.25</td>
<td>.13</td>
<td>.02</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>3. Adversarial in-degree centrality scale: 0-100</td>
<td>69.56</td>
<td>14.28</td>
<td>—</td>
<td>−.09</td>
<td>−.25</td>
<td>−.35*</td>
<td>−.39*</td>
<td>−.36*</td>
<td>−.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Conscientiousness scale: 1-5</td>
<td>3.66</td>
<td>0.69</td>
<td>—</td>
<td>.32*</td>
<td>.32*</td>
<td>.37*</td>
<td>.37*</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Agreeableness scale: 1-5</td>
<td>3.70</td>
<td>0.70</td>
<td>—</td>
<td>.54**</td>
<td>.21</td>
<td>.51**</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Emotional stability scale: 1-5</td>
<td>3.44</td>
<td>0.73</td>
<td>—</td>
<td>.50**</td>
<td>.60**</td>
<td>.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Extraversion scale: 1-5</td>
<td>3.12</td>
<td>0.83</td>
<td>—</td>
<td>.51**</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Openness to experiences scale: 1-5</td>
<td>3.87</td>
<td>0.57</td>
<td>—</td>
<td>.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Individual performance</td>
<td>3.55</td>
<td>0.67</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Correlation is significant at the .05 level (two-tailed).

**Correlation is significant at the .01 level (two-tailed).
Hypotheses 7a to 7e examined the moderating effect of adversarial centrality on the relationship between personality traits and individuals’ performances through hierarchical regression analysis. The main effects of each of the Big Five traits on adversarial centrality were tested first by entering them in the initial step of a series of five regression analyses. Each hypothesis was tested by examining the significance level of the regression coefficient for the interaction term, as well as the incremental gain in $R^2$ in the second step, when the interaction term between adversarial network centrality and each of the Big Five traits was entered in each regression.
As reported in Table 6, the results showed a significant interaction between adversarial network centrality and three personality traits in predicting individual performance. The standardized regression coefficient for the interaction term between centrality in adversarial networks and conscientiousness was $\beta = .42 \ (p < .05)$ and the corresponding $\Delta R^2 = .17 \ (p < .01)$; for emotional stability, $\beta = .30 \ (p < .05)$ and the corresponding $\Delta R^2 = .09 \ (p < .05)$; and for openness to experiences, $\beta = .39 \ (p < .05)$ and the corresponding $\Delta R^2 = .14 \ (p < .01)$. Because centrality in adversarial networks was negatively related to performance, the results showed that, for individuals with lower levels of adversarial network centrality, the positive effect of personality traits, including conscientiousness and emotional stability as well as openness to experiences on individuals’ performance, would be stronger. Conversely, for individuals with a higher level of adversarial network centrality, performance was more likely to be compromised as a result of being disliked by group members. Finally, no significant result was found for the moderating effects of adversarial network centrality on the effect of agreeableness ($\Delta R^2 = .03, \ p > .05$) and extraversion ($\Delta R^2 = .01, \ p > .05$) on individuals’ performance. In summary, Hypotheses 7a, 7c, and 7e were supported. Following the same procedure used in Study 1 (Cohen, 1988), effect size and power analysis were conducted. For the supported hypotheses in Study 2, the effect size ranged from .12 to .30 and the achieved power ranged from .50 to .87.

The number of participants in Study 2 was slightly lower than the first study. Although the sample size of 42 was more than sufficient for studying a complete social network, using regression analysis to obtain statistical significance to support our hypotheses was made more challenging. Despite the increased difficulty, many of our hypotheses were supported. It is reasonable to assume that these results are more likely to be robust findings, given the ease of achieving statistical significance with larger samples.

**Discussion**

The increasing level of complexity of tasks in contemporary organizations calls for more group work. Yet, not all groups can fully reap the benefits of working collectively (Pavitt, 2003). Negative group dynamics can actually make a group less efficient than the alternative where individuals work independently. We chose adversarial networks in our study because, compared with other informal social networks such as advice and friendship networks, adversarial networks are, more often than not, neglected...
because of their sensitive nature. At the same time, however, they may exert stronger influence on group dynamics (Labianca et al., 1998). Our work also contributes to existing research on social capital, which has, to date, primarily studied how social relationships can facilitate certain actions while ignoring the possible negative consequences of social ties (Adler & Kwon, 2002; Portes, 1998).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.55**</td>
<td>3.53**</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.26</td>
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</tr>
<tr>
<td>Adversarial network centrality</td>
<td>−0.49**</td>
<td>−0.57**</td>
</tr>
<tr>
<td>Conscientiousness × Adversarial network centrality</td>
<td></td>
<td>0.42**</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>0.28**</td>
<td>0.45**</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td></td>
<td>0.17**</td>
</tr>
<tr>
<td>Constant</td>
<td>3.55**</td>
<td>3.55**</td>
</tr>
<tr>
<td>Agreeableness</td>
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<td>Adversarial network centrality</td>
<td>−0.46**</td>
<td>−0.50**</td>
</tr>
<tr>
<td>Agreeableness × Adversarial network centrality</td>
<td></td>
<td>0.19</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>0.22**</td>
<td>0.25*</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
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<td>0.03</td>
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<tr>
<td>Constant</td>
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<td>3.60**</td>
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<td>Emotional stability</td>
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<td>0.11</td>
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<td>−0.46**</td>
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<td>Emotional stability × Adversarial network centrality</td>
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<tr>
<td>Model $R^2$</td>
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<td>0.32**</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
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<td>−0.45**</td>
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<td>Extraversion × Adversarial network centrality</td>
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<tr>
<td>Model $R^2$</td>
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<tr>
<td>$\Delta R^2$</td>
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<td>0.01</td>
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<td>Constant</td>
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<td>3.60**</td>
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<td>Openness to experiences</td>
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<td>0.39**</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>0.22**</td>
<td>0.35**</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td></td>
<td>0.14**</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.
Our first study examined how adversarial network ties were related to students’ academic achievements and satisfaction toward their group experiences. It extends previous studies on the relationship between social ties and performance in that it does not focus exclusively on the positive side of network relations. Results showed that the in-degree centrality of adversarial networks significantly and negatively correlated with individual performance. The out-degree centrality of adversarial networks, on the other hand, was found to be significantly and negatively related to individuals’ satisfaction with their groups. These results, in turn, indicate that the states of either being disliked by group members or disliking group members may have a significant negative influence on students’ experiences with group work and, in turn, negatively influence performance. Taken together, the results show the importance of making a distinction between in-degree and out-degree centrality in the study of adversarial relationships. Even though high values for both measures implicated negative group dynamics, they had effects on different aspects of group experiences.

Our first study also explored the effect of frequency of communication on adversarial network structure and on individuals’ performance and satisfaction with group experiences. Our results indicated that frequency of communication with other group members could make a group member more likeable and help him or her perform better. In other words, the less group members communicate with others, the less likely it is that they will benefit from intellectual exchange with fellow group members. As a result, these individuals are, at best, likely to perform poorly and, at worst, likely to be sources of possible negative group dynamics. However, through timely identification of such individuals through the use of group-support technologies enabled by social network analysis, supervisors, or even fellow group members, can intervene before the problem spirals out of control. This goal can be more easily achieved with the implementation of group support systems that can track and analyze social interactions among team members, thus helping supervisors play a better role as leader, facilitator, or moderator to support group projects.

Both studies explored a common question, that is, why people end up in central positions in adversarial networks. Whereas our first study focused on addressing the issue through profiling people based on their frequency of communication with other group members, the second study further explored how personality traits can influence adversarial network structure. In addition, the second case study explored how personality traits can interact with adversarial network centrality to predict individuals’ performances. First, our
results suggest that people who were even-tempered (emotionally stable) as well as curious and creative (openness to experiences) are less likely to be disliked by group members. Second, the results show that adversarial network centrality could constrain the influences of conscientiousness, emotional stability, and openness to experiences on individuals’ performance. In other words, when members became the subjects of group dislike, their positive personality qualities, such as sound work ethic, tolerance, and creative imagination, became weaker predictors of performance. For example, we found that when disliked, the performance of individuals with a high level of conscientiousness would actually deteriorate. Considering that conscientiousness and emotional stability are regarded as the most consistent predictors of job performance, the results of our study further confirmed the importance of negative relationships in project groups.

Building on the results of our studies, some intervention programs to support group work can be explored. For instance, in our first study, frequency of communication with group members was found to be significantly related to both the in-degree centrality of the adversarial networks and students’ performances. These findings could be incorporated into the design of group decision support systems to facilitate group collaboration because technology offers unique capabilities for identifying adversarial networks and facilitating ways of overcoming negative dynamics in group work. As a matter of fact, some efforts have been made to integrate social network analysis into group support systems in examining both the frequency and content of messages (Goecks & Mynatt, 2004; Labianca et al., 1998; Medynskiy, Ducheneaut, & Farahat, 2006). Yet, most of these technological interventions focus only on positive networks. The design of technologies to support group work would thus be greatly improved by incorporating social network analysis on negative ties as well.

**Directions for Further Research**

Labianca and Brass (2006) argued that negative relationships may have a greater effect on socio-emotional and task outcomes than positive relationships; however, recognizing the importance of issues affecting negative ties and the adversarial network is far from sufficient. More empirical efforts are needed to explore what factors influence the development of negative ties. Some other psychological attributes may play a role. For instance, Rahim’s Organizational Conflict Inventory–II (ROCI-II; Rahim, 1983;
Weider-Hatfield, 1988) was developed to emphasize individual predispositions to manage interpersonal conflicts. The scale treats communication implicitly as a set of strategies used to achieve interpersonal goals and as a way of reducing the amount of conflict in the system. It is highly possible that the tendency of individuals to avoid conflict may influence their position in an adversarial network. Thus, it would be interesting to explore what additional factors (e.g., conflict resolution orientations) may influence an individual’s position in an adversarial network.

Second, Jehn, Northcraft, and Neale (1999) proposed three types of conflicts, including relational conflict, task conflict (i.e., conflict involving the nature of a given task), and process conflict (i.e., conflict involving how to handle a task). Although the focus on adversarial relationships in this study is closely related to relational conflict, a future study could explore all three types of conflicts and examine how they might combine to influence performance. Although our studies focused only on individual-level analysis, future studies should also be done to extend the analysis to a higher level. For example, it would be interesting to examine the strength of adversarial ties within a group and test if some groups are more contentious than others or have a denser adversarial network (e.g., Labianca et al., 1998; Nelson, 1989). Moreover, future studies should also be conducted to examine the adversarial relationship at the intergroup level. Realistic group conflict theory (RGCT; e.g., Jackson, 1993; Sherif, 1958, 1967) proposed that intergroup conflict would be produced if groups are engaged in reciprocally competitive and frustrating activities. Future studies could be designed to investigate how such intergroup adversarial relationships would influence the performance of the group or group leaders.

Third, future studies may also explore how individuals could make the best out of a less than ideal situation or how individuals could adjust their negative ties with peers to improve their performance. The topic is especially interesting because the Big Five personality traits have been found to contribute positively to individual performance. It is therefore important to help individuals scoring high in those personality traits to avoid the “trap” of negative peer-to-peer relationships. Isen and colleagues (e.g., Erez & Isen, 2002; Isen, 2004; Isen & Labroo, 2003) have conducted a series of studies inducing positive affect (i.e., happy or pleasant mood) among employees, mostly at the individual level of analysis. It would be interesting to explore whether her research findings could be extended to interpersonal or group levels to help central persons in adversarial networks improve their social relations.
Limitations

The first limitation of our studies was our use of the same single-item measure of adversarial network, which has an unknown reliability. The use of a single-item measure of network relations is common in network analysis, in particular in the study of adversarial relations (e.g., Baldwin et al., 1997; Labianca et al., 1998; Sparrowe et al., 2001), because collecting network data is intrinsically much more difficult and time consuming. Regardless, researchers should still make an effort to use multiple questions to evaluate adversarial relations when it is not too demanding on the participants’ time and attention. If the sample size in our studies had been larger, it would have been interesting to explore whether multiple items could have yielded more reliable results, similar to the measurement of attribute variables in regular surveys.

Borgatti and Molina (2003) outlined two main risks to research participants when network data are collected in a pure academic context: lack of anonymity and lack of consent. In our two studies, the concern of anonymity was addressed by using an untraceable identification number in all the analyses and reports. The lack-of-consent issue refers to collecting data from persons from whom explicit consent has not been obtained. In Study 2, all of the students participated in the study and provided complete data. However, in Study 1, 11 out of 60 students were removed from the study, either because they did not volunteer for the study or they failed to provide complete data. Although the response rate for Study 1 was still high, further reduction in response rate could have raised the issue of “data integrity” (p. 343), as the network data collected did not include the whole population.

Students in the two studies were assigned to groups in different ways. Students in the first study were assigned to groups by instructors, whereas students in the second study self-organized themselves into groups. Because none of the authors was an instructor of either project-based class, we exercised no control over how the two classes were organized. Whereas testing common hypotheses from different types of groups improves the generalizability of the results, having commonalities across study samples facilitates results comparison.

It should also be noted in this article that we used student samples from two project-based classes. These student groups potentially shared many of the characteristics of groups in real organizational settings in terms of the duration of the team project and the difficulties of assigned tasks. However, because of their transitory nature, such groups lack certain other characteristics, such as differential status among team members or more complicated
conflicts in goals and orientations. Situational-based factors are very important when studying personality traits (Barrick et al., 2005); therefore, future studies on real organizational groups must be examined so that the findings of our study can be generalized to other group dynamics and processes.

Conclusion

This article reports results from two studies designed to examine how negative group dynamics may influence group performance and satisfaction. The contributions of the research are threefold. First, the findings clearly differentiate the effects of in-degree and out-degree centralities on performance and satisfaction, correcting one of the major oversights in earlier studies. Second, the research links centrality of adversarial networks to frequency of communication among group members and provides empirical guidelines for possible interventions. Third, our findings also show the relationship between personality traits and adversarial network centrality as well as how adversarial network positions could constrain the relationship between certain personality traits and individuals’ performances. In sum, the results of our study showed that group members disliked by others were less likely to perform well. Group members were also less likely to feel satisfied with the group process when they disliked others. On the other hand, frequent communication with others could make a person more likeable and help him or her perform better. Furthermore, scoring high on the Big Five personality traits is not enough for individuals to obtain good individual performance evaluations. Maintaining pleasant peer relations is at least equally crucial because it can determine whether these personality traits can actually help in achieving good individual performance.

References


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