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Abstract

This study integrates research in social networks and interpersonal counterproductive behaviors to examine the role of third-party relationships in predicting an individual's susceptibility to coworker mistreatment, and in moderating the relationship between coworker mistreatment and job performance. Third-party embeddedness and network closure are examined in the formal workflow network and the informal liking network. Results obtained from employees in a family-owned Chinese business in Singapore indicate that an individual is more likely to be mistreated by a coworker when both parties are strongly embedded in mutual third-party relationships in the workflow network, and that the individual is less likely to be mistreated when both parties are strongly embedded in the liking network. At the individual network level, network closure (i.e., the extent to which an individual's contacts are themselves connected to one another) in the workflow network increases the likelihood that the individual will be mistreated by a coworker, but closure in the liking network weakens the negative relationship between mistreatment and performance. The findings offer a network-based perspective to understanding interpersonal mistreatment and counterproductive work behaviors, particularly in the context of Confucian Asian firms, and provide practical implications for organizations and individuals to reduce counterproductive behaviors at work.

Keywords: counterproductive work behaviors, network closure, social networks, third-party embeddedness, workplace mistreatment, workplace victimization

INTRODUCTION

When employees mistreat others in the workplace, both individuals and organizations suffer

sharp costs. Costs to the victims include mental health (e.g., depression, anxiety, burnout),

physical health (e.g., somatic symptoms, fatigue, sickness), job dissatisfaction, life

dissatisfaction, and turnover intentions (Aquino & Thau, 2009; Bowling & Beehr, 2006). To

organizations, costs include healthcare, litigation, employee turnover, and retraining, and are

estimated at US$250 million per year (Duffy, 2009). The significance of these individual and

organizational costs is underscored by the pervasive nature of negative interpersonal behaviors –

50% of U.S. employees, or approximately 53.5 million workers, report workplace mistreatment

(Workplace Bullying Institute, 2012). Mistreatment is also prevalent in Asia (e.g., Lim, 2011;

Loh, Restubog, & Zagenczyk, 2010), where 55% of Asian workers report workplace

mistreatment (Cobb, 2012). These negative interactions have a disproportionately greater effect

than positive interactions on workers' cognition, behaviors, and well-being (Labianca & Brass,

2006; Taylor, 1991), underscoring that we must better understand and reduce workplace

mistreatment.

Recognizing its high costs, organizational researchers have studied coworker

mistreatment, victimization, and counterproductive behaviors (for reviews, see Aquino & Thau,

2009; Spector & Fox, 2005). Among the overlapping concepts in the literature are harassment

(Bowling & Beehr, 2006), aggression (Hershcovis & Barling, 2010), social undermining (Duffy,

Ganster, & Pagon, 2002), abusive supervision (Aryee, Sun, Chen, & Debrah, 2008), deviant

behaviors (Robinson & Bennett, 1997), incivility (Andersson & Pearson, 1999), and bullying

(Einarsen, 2000). These constructs, while distinct along certain characteristics such as intensity

and perpetrator position (Hershcovis, 2011), have in common the fact that individuals are, or

perceive themselves to be, targets of coworker mistreatment. In this study, I focus on acts that

directly impact victims' job performance by thwarting or hindering them from carrying out their work responsibilities and tasks. Because such acts are dyadic, I adopt terminology commonly used in prior studies and refer to the targets of mistreatment as *ego* and perpetrators as *alter*.

Research on the antecedents of such behaviors point to ego's characteristics such as gender, personality, and conflict management style (Aquino, 2000; Aquino, Grover, Bradfield, & Allen, 1999), alter's characteristics such as impulsivity and gender (Hershcovis et al., 2007; Zapf, Einarsen, Hoel, & Vartia, 2003), and the nature of the relationship between ego and alter (Venkataramani & Dalal, 2007). Because both actors interact in and are embedded within the larger configuration of relationships in the workplace, the likelihood of mistreatment may also be predicted by the presence of third parties and, at an even broader level, by ego's position in the larger social structure. Thus, one objective of this study is to examine the role of indirect relationships and the larger social context in predicting interpersonal mistreatment. Drawing on research in social networks and social capital, which demonstrates that actions and behaviors are influenced by the social context and other players in that social network (e.g., Adler & Kwon, 2002), I investigate two forms of social capital – third-party embeddedness and network closure – as predictors of interpersonal mistreatment.

Third-party embeddedness reflects ego's and alter's shared relationships with one or more third parties who provide ego with social capital by constraining alter from acting opportunistically and negatively toward ego (Buskens & Raub, 2002; Raub & Weesie, 1990). Network closure, on the other hand, derives from ego's overall position in the network, based on the configuration of ego's relationships with others. This concept captures how extensively ego's contacts are themselves connected with one another. Two theories make opposing predictions about closed networks and their power to enhance ego's position. Structural holes theory (Burt,

1982, 1992) predicts that individuals who have unconnected contacts, that is, low network closure, enjoy information and control benefits that enhance their power in the network. In contrast, network closure theory (Coleman, 1988, 1990) proposes that network closure provides cohesion and solidarity benefits that augment ego's social capital. I build on and reconcile the two theories by considering the type of network relationships – instrumental, work-based relationships versus expressive, affect-based ones – as a factor determining whether closure generates more or less interpersonal mistreatment, thereby providing a more contextualized investigation of the role of social networks and social capital on mistreatment.

My second objective is to investigate the job performance implications of mistreatment. Previous studies examining the link between negative interpersonal behaviors and job performance have found a weak to moderate relationship (Bowling & Beehr, 2006; Hershcovis & Barling, 2010), suggesting the presence of contextual variables that determine whether and when such behaviors would be detrimental to job performance. In keeping with the focus on network-based attributes, I examine the role of network closure across the two types of networks in moderating the relationship between interpersonal mistreatment and performance.

Using data from a Chinese family-owned business in Singapore, I test this network-based model of interpersonal mistreatment to provide a novel investigation of negative workplace behaviors and of how network characteristics operate in an Asian Chinese context. This issue has received scant research attention (Chai & Rhee, 2010; Xiao & Tsui, 2007), despite calls for more indigenous country-specific research in Asia and other developing economies (Tsui, Nifadkar, & Ou, 2007), including research on interpersonal mistreatment in non-Western countries (Aquino & Thau, 2009). Singapore presents an interesting research context because of its cultural uniqueness in bridging Western and Asian practices, as well as its cultural similarity to other

Confucian Asian countries such as China, Hong Kong, and Taiwan (Chhokar, Brodbeck, &

House, 2007). The roles of collectivism and *guanxi* (i.e., relationships) in the organizational

context are also likely to be especially relevant in Chinese-owned family businesses where

family members occupy key management positions and employees are predominantly ethnic

Chinese. As such, network-based findings observed in the West as well as in Asia are equally

pertinent in informing the role that network variables play in predicting interpersonal

mistreatment in Singapore, and the present findings can, in turn, address the dearth of research

on this issue.

THEORETICAL BACKGROUND AND HYPOTHESES

Social capital, defined as the goodwill available to individuals, derives from the *structure* and

content of an individual's relationships with others, and can be mobilized to yield benefits that

include information, influence, and solidarity (Adler & Kwon, 2002). Research focusing on the

structure of social networks has examined structural characteristics such as network centrality

(e.g., Brass, 1981; Brass, 1984), network closure or brokerage (e.g., Burt, 2000, 2005; Coleman,

1988), and third-party relationships and embeddedness (e.g., Ferrin, Dirks, & Shah, 2006;

Krackhardt, 1988b; Tortoriello & Krackhardt, 2010). Research on the *content* of social networks

has differentiated among various types of relationships, including instrumental work-based

relationships such as advice and workflow ties, and expressive or affect-based relationships such

as social support and liking ties (Podolny & Baron, 1997). Following from these content-based

perspectives, I examine one instrumental network, namely the workflow network capturing the

flow of work resources between actors, and one expressive network, the liking network, that

captures whether an individual likes another. I then incorporate structural perspectives by

examining third-party embeddedness in both networks in the next section, followed by network closure in the same two networks in the subsequent section, to predict interpersonal mistreatment between two individuals.

Third-Party Embeddedness and Interpersonal Mistreatment

The main thesis underlying third-party embeddedness is that individuals' behaviors toward others are 'constrained by ongoing social relations' (Granovetter, 1985: 482). When two individuals are both connected to one or more mutual third parties, the presence of the third parties provides a form of social insurance against defection (Chua, Morris, & Ingram, 2009). Such third-party embeddedness alters the dynamics of the relationship between ego and alter in several ways that diminish ego's likelihood of being mistreated by alter.

First, mutual third parties exert reputational effects that control and constrain alter's actions toward ego (Buskens & Raub, 2002; Ferrin et al., 2006; Raub & Weesie, 1990). Specifically, when the mutual third parties learn that alter is mistreating ego, alter can suffer long-term consequences in loss of reputation and trust from the third parties (Raub & Weesie, 1990). The more numerous the mutual third parties binding ego and alter, the stronger the reputational and trust effects (Buskens, 2002; Ferrin et al., 2006). Second, third parties have more power than ego to constrain alter's negative actions by threatening sanctions that punish or retaliate against alter. Depending on the type of relationship that links the third parties to both ego and alter, third-party sanctions can include the withholding of work resources from alter (in the instance of workflow relationships), or social disapproval, ostracism, and withholding of social support (for liking relationships). Finally, mutual third parties can help resolve and manage conflicts that may arise between ego and alter, thereby preventing conflicts from

manifesting into negative behaviors or, at minimum, decreasing the frequency of such behaviors (Aquino & Lamertz, 2004; Krackhardt, 1999; Simmel, 1950). For instance, mutual third parties can help alter to understand ego's perspective, offer objective means to resolve conflicts, and/or provide different solutions to reconcile differences.

These mechanisms are expected to be particularly robust in a Confucian Asian culture, based on at least two cultural features that characterize the Chinese work context. First, ethnic Chinese strongly emphasize *guanxi* and trust, which renders reputational consequences even more costly and, as such, more constraining on negative behaviors (Song, Cadsby, & Bi, 2011). Second, Chinese workers have a collectivistic cultural orientation that emphasizes harmony and group goals, intensifies sensitivity toward social sanctions, and makes third parties more inclined to help resolve ego/alter conflicts (Chua et al., 2009). Finally, because *mianzi* (i.e., face or reputation) serves as a 'social currency that has a definite value' (Batjargal, 2007: 404), social sanctions can be even more effective in Chinese contexts. Thus I propose the following hypotheses:

> *Hypothesis 1: Ego's likelihood of mistreatment by alter will negatively relate to alter's degree of embeddedness in ego's workflow network.*

> *Hypothesis 2: Ego's likelihood of mistreatment by alter will negatively relate to alter's degree of embeddedness in ego's liking network.*

Network Closure and Interpersonal Mistreatment

Social capital also derives from individuals' overall network structural positions that can confer various benefits, power, and protection from mistreatment. In particular, the concept of network closure (or its converse, brokerage) has long been associated with social capital, and reflects how extensively the individual's contacts are themselves connected to one another. This differs from the concept of third-party embeddedness in that network closure pertains to individuals' positions in relation to their contacts and their contacts' relationships with one another, whereas third-party embeddedness focuses on the immediate triads of ego, alter, and third parties connected to both of them. Thus, the concept of network closure is at the individual network level, while third-party embeddedness is at the dyadic level and varies with each alter.

Figure 1 presents two networks that illustrate the difference between these concepts. In both networks, the third-party embeddedness score is one because there is only one third-party, X, who is jointly connected to both ego and alter. However, ego's network closure in the first network is low, with a score of one, because only one pair of ego's contacts is connected to each other (i.e., between X and alter). In the second network, ego's network closure is higher with a score of three because three pairs of ego's contacts are also connected to each other (i.e., between X and Y; Y and Z; and X and alter). Thus, third-party embeddedness focuses only on mutual third parties who have ties to *both* ego and alter and does not consider how those third parties may themselves be connected, while closure focuses on ego's position in relation to all of ego's other contacts, and further considers how these contacts are themselves connected.

------------ Insert Figure 1 about here ------------

Two key theories have been proposed to explain the effects of network closure, and each makes different predictions about whether a closed network is beneficial or detrimental to various work outcomes. On one hand, the theory of closure (Coleman, 1988, 1990) proposes that

network closure yields solidarity benefits because the interconnectedness among contacts helps

facilitate and reinforce shared norms and beliefs within the group, thereby promoting

cooperation, cohesion, and social support among members (Adler & Kwon, 2002). Such

interconnectedness also facilitates information flow, and in the context of interpersonal

mistreatment, this can mean that news of an alter mistreating a member will flow quickly among

others, who in turn will sanction or seek redress against alter for harming one of their own. Thus,

this theory predicts that closure will deter others from mistreating a member of such a coalition.

On the other hand, structural holes theory (Burt, 1992, 2005) contends that social capital

can be derived from being in a network where contacts are themselves not connected (i.e., where

structural holes exist). An individual who bridges structural holes derives two benefits. The first

is information benefits through access to timely, diverse, and non-redundant information from

different contacts, which in turn provides faster access to more unique opportunities. The second

is control benefits from brokering the relationship between two or more contacts and playing

their interests off one another, thereby acquiring bargaining power and control over key

resources and outcomes (Burt, 1992). Thus, according to this theory, individuals who bridge

structural holes occupy powerful positions that make them less likely to be mistreated (Brass,

Butterfield, & Skaggs, 1998).

While many empirical studies support structural holes theory (e.g., Burt, 2000, 2005),

various contingency factors also make network closure beneficial, including the number of peers

(Burt, 1997), the content of the network relationships (Podolny & Baron, 1997), and the national

culture (Chai & Rhee, 2010; Xiao & Tsui, 2007). In particular, given that I examine two distinct

types of network relationships in an ethnic Chinese firm, Podolny and Baron's (1997) study, as

well as prior findings derived from Confucian Asian cultures, are especially informative.

Structural holes have been found to be beneficial in instrumental networks but less so in expressive networks (e.g., lbarra & Smith-Lovin, 1997; Podolny & Baron, 1997). Instrumental networks provide valuable information and work resources, whereas expressive networks offer social support and identity (Podolny & Baron, 1997). As such, they convey different forms of benefits and have different network configurations for realizing their benefits. For workflow network where the content being transmitted pertains to work resources and information, power derives from having access to and controlling such resources and information. Thus, individuals who occupy low-closure (or high-brokerage) positions can better access diverse information, be privy to novel opportunities, broker resources and relationships among other players, and realize the benefits integral to the network. Such a position makes them less likely to be mistreated. Although the brokerage of relationships may be inconsistent with collectivistic norms in Asian societies and fail to yield the benefits observed in Western contexts (Xiao & Tsui, 2007), these positions may be tolerated in Asian settings if they offer positive value to the firm (Chai & Rhee, 2010). In the context of workflow network, brokering such relationships can yield resource and information advantages that benefit not only the individual but also the organization's functioning. Furthermore, using network position to gain competitive advantage is consistent with the high performance orientation common to Confucian Asian societies (House et al., 2004), and is thus likely to be accepted in such cultures.

Hypothesis 3: Ego's likelihood of mistreatment by alter will positively relate to ego's network closure in the workflow network.

On the other hand, in the liking network where benefits pertain to shared identity and social support rather than material resources, a closed network reinforces and buttresses group cohesion and identity, particularly in a collectivistic culture where in-group and out-group distinctions are especially strong and boundaries of trust are limited to the in-group (Song et al., 2011). As such, an individual with a closed liking network would enjoy stronger support, cohesion, and cooperation, as well as a greater mistreatment deterrent function.

> *Hypothesis 4: Ego's likelihood of mistreatment by alter will negatively relate to ego's network closure in the liking network.*

Mistreatment, Job Performance, and the Moderating Role of Network Closure

Targets of mistreatment tend to perform poorly in their jobs (e.g., Hershcovis & Barling, 2010; Porath & Erez, 2007). From a resource perspective, being mistreated poses extra work challenges that ego must overcome by devoting limited resources. For instance, when faced with a coworker who withholds information, ego must spend additional time and attention to obtain information through other means and sources, which then detracts from resources that should be devoted to other work responsibilities. Second, being mistreated diverts cognitive, psychological, and emotional resources to fuel coping strategies, including rationalizing, ruminating, and contemplating ways to prevent further mistreatment and/or to retaliate (Hershcovis & Barling, 2010; Hobfoll, 1989). Finally, the victim may deliberately withhold work efforts as retaliation against the organization for allowing or not preventing the mistreatment (Harris, Kacmar, & Zivnuska, 2007; Porath & Erez, 2007).

Despite these arguments, empirical evidence indicates that the link between mistreatment and job performance is not strong, and is contingent on several moderating conditions. For example, a meta-analytic study found that workplace harassment was only weakly related to job performance (Bowling & Beehr, 2006). Other studies reported a null relationship in certain conditions, such as under organic work structures (Aryee et al., 2008), or when employees failed to derive high meaning from their work (Harris et al., 2007). In this study, keeping with the emphasis on the role of networks as social capital, I contend that ego's network structure can serve to mitigate the detrimental performance implications ensuing from mistreatment.

As discussed, workflow network brokerage affords ego information, resources, and control benefits, and ego can harness these benefits to overcome work problems ensuing from mistreatment. Following on the earlier example of withheld information as a form of coworker mistreatment, individuals with higher workflow network brokerage (or lower closure) can use their position to obtain information from other sources or through other avenues, thereby overcoming the obstacle and mitigating the negative performance implications that would otherwise ensue. In contrast, individuals who are not privy to network-based benefits will be likely to suffer greater negative performance consequences. Thus, individuals who have vital social capital through workflow network brokerage will be better protected against challenges from mistreatment, and such a position can attenuate the relationship between mistreatment and performance.

Hypothesis 5: Workflow network closure will moderate the negative relationship between mistreatment and job performance such that the relationship will be weaker when workflow network closure is low.

In the liking network, high network closure is expected to diminish the performance consequence of mistreatment through a different mechanism. High liking network closure provides identity and social support benefits that can alleviate the detrimental psychological and emotional effects of being mistreated. This is consistent with the buffering hypothesis in the social support literature, where people with more social support report weaker relationships between stress and strain outcomes in physical and psychological well-being, compared with those who have less social support (Cohen & Wills, 1985). Mistreated individuals in more cohesive liking networks enjoy psychological and emotional support that weakens the negative performance effects of mistreatment; those who have no such support are fully impacted. Furthermore, a cohesive network can diffuse feelings of anger and desire for revenge, and can offer coping strategies beyond decreased job performance as retaliation. Thus, while low closure in the workflow network provides ego with work-based resources to attenuate negative performance effects, high closure in the liking network conveys psychological and emotional resources that can also weaken the link between mistreatment and performance.

Hypothesis 6: Liking network closure will moderate the negative relationship between mistreatment and job performance such that the relationship will be weaker when liking network closure is high.

METHOD

Sample and Procedures

I collected data from the office staff of a mid-sized furniture design and manufacturing firm in Singapore. The firm, specializing in tanning leather and designing and producing leather upholstery, is a Chinese family-owned business where family members occupy key roles in the top management team, the executive committee, and the board of directors. At the time of data collection, the firm had 106 full-time office employees (excluding production workers) from nine functional departments such as finance, sales, purchasing, and research and development. Most were ethnic Singaporean Chinese. I administered a questionnaire-based survey to all the office staff at their work, and assured them that their participation was voluntary and responses were confidential. They returned their completed questionnaires directly to me. To further protect their confidentiality, I coded each questionnaire with a number rather than the respondent's name, and only I had access to the list linking each number to the corresponding respondent. Of the 106 employees, 89 (or 84.0%) returned usable questionnaires. Their average age was 33.4 years, and 31 (or 34.8%) were male. The average tenure was 3.7 years, and 36 (40.4%) had at least a bachelor's degree. Analyses revealed that the respondents were not significantly different from non-respondents in age, gender, or tenure.

Measures

I employed a social network methodology to collect data pertaining to Hypotheses 1 through 4 because they involved social relations between pairs of individuals. I used a roster method whereby respondents were given an alphabetical list of all full-time office staff, grouped by departments, and answered questions relating to each of the other 105 individuals on the list. Consistent with common practice in social networks studies (e.g., Venkataramani & Dalal, 2007), and to avoid respondent fatigue, each network variable was measured with a single item.

While the use of multiple items per variable is superior, this is often not practical in network studies as it would require respondents to rate, in this case, 105 employees on the same item. Doing so across multiple items would be both time-consuming and mentally taxing, and thus network studies avoid that approach (Ferrin et al., 2006). In addition, prior research has demonstrated that single-item measures can be reliable when supplemented with the roster method to facilitate respondents' recall (Marsden, 1990), bolstering confidence on the appropriateness of this method.

Workflow network variables. Following earlier studies (e.g., Mehra, Kilduff, & Brass, 2001), I assessed the workflow network by having respondents indicate the extent to which they send work resources, such as materials, documents, and information, to every other employee as part of their formal work role. Respondents provided answers for every employee listed in the roster using a four-point scale ranging from 0 (*not at all*) to 3 (*to a great extent*). This network captures the actual workflow in the organization rather than any discretionary behaviors that may be performed (Mehra et al., 2001). After excluding non-respondents, this yielded an 89 x 89 'resources provided' matrix where each cell value *Xij* represented the amount of workflow resources that an individual *i* provided to a coworker *j*. This network formed the basis for arriving at the subsequent workflow variables.

Third-party embeddedness in the workflow network, capturing the number of mutual third parties who exchanged workflow resources with both ego and alter, was computed using procedures advocated in prior studies (Ferrin et al., 2006). First, I symmetrized the 'resources provided' matrix such that each cell value *Xij* reflected the smaller value of *i*'s resources provided to *j* and *j*'s resources provided to *i*, and then dichotomized this new network such that

relationships where *both* parties exchanged at least *some* work resources (i.e., value of 1 or above) with each other were coded as 1, and relationships where only one party provided resources to the other, or both parties did not provide resources to each other, were coded as 0. This network thus reflected interdependent workflow relationships where both parties exchanged resources with each other. I used interdependent or reciprocated relationships, instead of one-way relationships, because the explanatory mechanisms underlying the effects of third-party embeddedness involve interdependent or mutual ties (Ferrin et al., 2006; Raub & Weesie, 1990). I then matrix-multiplied this dichotomized network by itself, so that in the resultant matrix, cell value Xij captured the number of third parties who exchanged work resources with both i and j. This number thus represents the degree of third-party embeddedness between i and j, such that higher values reflect a greater number of mutual third parties who had interdependent workflow relationships with both i and j.

I assessed workflow network closure using the honest broker index in UCINET 6. This index indicates the number of times that an individual connects any pair of other actors who are themselves connected with each other (Borgatti, Everett, & Freeman, 2002). Compared with other common closure measures such as betweenness centrality or network constraint, the honest broker index only considers *direct* ties that exist between the individual's contacts, whereas the other two take into account longer chains of indirect relations that may connect those contacts (Sasovova, Mehra, Borgatti, & Schippers, 2010). Given that the benefits of brokerage tend to be concentrated in the local, immediate network (Burt, 2007, 2010), I used the honest broker index as a measure of network closure.[1] The workflow network closure variable counts, within the workflow network, the number of times that an individual receives resources from any pair of actors who themselves also receive resources from each other. This individual score was then

adapted to the 89 x 89 square matrix by repeating each individual i's score across the 89 columns in the individual's row, consistent with previous practice (e.g., Venkataramani & Dalal, 2007).

Liking network variables. I measured the liking relationship between two individuals by asking respondents to indicate how they felt about each of the other employees. The degree of liking that one had for another was measured on a four-point scale ranging from 0 (*not at all*) to 3 (*like a lot*). To compute third-party embeddedness in the liking network, I used the same procedure as that for third-party embeddedness in the workflow network. Liking network closure was also computed with the same procedure used for workflow network closure.

Interpersonal mistreatment. An individual's mistreatment was measured in two ways. The first measure assessed dyadic mistreatment where ego was mistreated by a specific alter, and was used to test Hypotheses 1 to 4. Following Sparrowe and colleagues' (2001) approach, interpersonal mistreatment was assessed by having respondents rate, on a scale ranging from 0 (*not at all*) to 3 (*a lot*), how much each of the other employees made it difficult for them to carry out their work. This description of mistreatment was intentionally broad so as to accommodate the multiple different ways in which an individual could be mistreated by others, and to be consistent with earlier conceptualizations of mistreatment as being viewed from the perspective of the recipient or target of such behaviors. At the same time, to ensure that the question was not overly broad or vague, I provided respondents with some common examples of mistreatment used in prior research (e.g., a coworker being uncooperative toward them, or delaying giving information or resources to them). Finally, because respondents had completed an overall mistreatment scale that listed six possible forms of workplace mistreatment (described next)

prior to this question, this offers further confidence that respondents were aware of the meaning of interpersonal mistreatment.

Because Hypotheses 5 and 6 pertained to ego's overall mistreatment experience in the workplace that is not specific to a particular alter, I included an overall measure of mistreatment using a six-item scale adapted from Neuman and Baron (1998). Respondents were asked to indicate, on a seven-point scale ranging from 1 (*never*) to 7 (*twice a week or more*), how often they experienced each of the negative behaviors, such as others delaying work to make respondents look bad or slow them down, and having access to needed information withheld by others. The responses on these items were then averaged to measure overall mistreatment, and the reliability coefficient of this scale was 0.85. Answers indicated that 92.1% of respondents had experienced at least one of the six negative behaviors once in their tenure at the organization. Furthermore, 85.4% had experienced at least one behavior once a month or more, and 76.4% had similar experiences once a week or more. As a whole, these statistics suggest that interpersonal mistreatment is fairly common and regular in the workplace.

Performance. Job performance was obtained from supervisor-rated performance evaluations that were part of the organization's annual performance appraisal process. These ratings were used to determine each employee's annual bonus and pay raise, and had real financial implications for the firm and the workers. The organization used a 5-point rating scale where 1 = *development needed*, 2 = *average*, 3 = *meets most expectations*, 4 = *exceeds expectations*, and 5 = *outstanding*.

Control variables. At the dyadic level, ego's propensity to be mistreated by alter may be due to differences in age, rank, gender, and education (Aquino & Thau, 2009). These dyadic differences

were included as control variables. I also controlled for each dyad's similarity in departmental affiliation and supervisor, to account for the possibility that being in the same department or having the same supervisor may trigger competitive pressures between the two and, in turn, greater propensity to mistreat and be mistreated. Because people who engage in negative behaviors are likely to have higher trait anger (Fox & Spector, 1999), which in turn may trigger retaliatory behaviors against them, I controlled for both ego's and alter's trait anger. This was measured with five items from the Anger facet of the IPIP personality scales (Goldberg et al., 2006). Direct dyadic relationships between two parties can also influence one's propensity to be mistreated by the other. For instance, individuals are less likely to harm someone they like (Brass et al., 1998), and thus I controlled for the strength of liking relationship that alter had with ego. Finally, power dependence arguments predict that individuals who depend on another person view that person as more powerful; consequently, they will be less likely to mistreat that individual, and vice versa (Aquino & Lamertz, 2004; Emerson, 1962). Thus, I controlled for workflow resources provided by ego to alter, as well as the resources received by ego from alter.

Because Hypotheses 5 and 6 predicting job performance were at the individual level, I included a different set of control variables. Based on previous findings that an individual's demographic characteristics related to job performance (e.g., Tsui & O'Reilly, 1989), I controlled for respondents' gender, education, age, and rank. Education was measured on a scale ranging from 1 (primary school education) to 9 (Ph.D.), and gender with a dichotomous scale (0 = male; 1 = female). Rank was measured based on respondents' position in the organizational hierarchy: 1 = clerical level; 2 = professional level; 3 = assistant manager level; 4 = manager level; and 5 = director level.

RESULTS

The dyadic-level hypotheses were tested using Quadratic Assignment Procedure (QAP)

regressions in UCINET 6. Because the observations in social network matrices are not

independent in that error terms within rows and columns are autocorrelated to each other,

standard ordinary least squares (OLS) tests are not appropriate. Instead, QAP regression is

recommended as it is a nonparametric test that resolves the autocorrelation issue (Krackhardt,

1988a). Table 1 presents the descriptive statistics and correlations of the dyadic-level variables,

and Table 2 presents the QAP regression results for dyadic-level mistreatment.

------------ Insert Tables 1 and 2 about here ------------

Hypothesis 1, predicting that third-party embeddedness in the workflow network would

be negatively related to interpersonal mistreatment, was not supported. While the relationship

was significant, the direction was opposite to that predicted, in that respondents were more likely

to be hindered by someone with whom they shared more mutual third-party relationships in the

workflow network ($\beta = 0.05$, $p < 0.05$). Hypothesis 2 was supported, such that the more third

parties with whom both respondent and another person shared liking relationships, the less likely

the respondent would be mistreated by the other person ($\beta = -0.03$, $p < 0.05$). In terms of network

closure, the results were consistent with Hypothesis 3 that predicted a positive relationship

between workflow network closure and mistreatment ($\beta = 0.05$, $p < 0.05$). Network closure in the

liking network, however, was not significantly related to dyadic mistreatment ($\beta = -0.01$, ns), and

Hypothesis 4 was not supported.

As for the control variables, differences in rank ($\beta = -0.04$, $p < 0.05$), ego's and alter's

trait anger ($\beta = 0.04$ and 0.02 respectively, $p < 0.05$), ego's and alter's provision of resources to

each other ($\beta = 0.05$, $p < 0.01$ and $\beta = 0.03$, $p < 0.05$ respectively), and alter's liking for ego ($\beta = -$

0.04, $p < 0.05$) were significantly related to ego's likelihood of being mistreated by alter. In other words, respondents were more likely to be mistreated by others with higher rank and more hierarchical power, presumably because the latter were more likely to get away with such behaviors without incurring retaliatory consequences. Furthermore, to the extent that both ego and alter had higher trait anger, they were more likely to mistreat and be mistreated by each other, consistent with an emotion-centered perspective of counterproductive behaviors. The degree of dependence that both parties had on each other also predicted their mutual mistreatment, conceivably because greater dependence created more opportunities for interpersonal conflict. Finally, corroborating prior findings (Venkataramani & Dalal, 2007), the results indicate that respondents were less likely to be mistreated by someone who liked them.

To test Hypotheses 5 and 6 on the moderating roles of workflow and liking network closure in the relationship between overall mistreatment and job performance, I conducted a series of moderated regression analyses at the individual level. Table 3 presents the descriptive statistics and correlations of the individual-level variables, and Table 4 presents the results of the moderated regression. To address the multicollinearity issue pertaining to interaction terms, I used scale-centered values for the independent variable, moderators, and the interaction terms (Cohen, Cohen, West, & Aiken, 2002). Hypothesis 5, predicting that workflow network closure would moderate the mistreatment-to-performance relationship, was not supported in that the interaction term between mistreatment and workflow network closure was not significant, as seen in Model 2 ($\beta = 0.00$, ns). Instead, the main effect of overall mistreatment on job performance was significant and negative ($\beta = -0.27$, $p < 0.05$), independent of workflow network closure. On the other hand, the moderating role of liking network closure was consistent with that predicted in Hypothesis 6, such that its interaction with mistreatment was significant

(Model 3: β = 0.28, *p* < 0.05). The main effect of liking network closure on performance was also positive (Model 3: β = 0.35, *p* < 0.01). A similar pattern of results was obtained in Model 4 when both network closure variables and their interaction with mistreatment were entered together.

I also computed the effect size (Cohen's f^2) of the significant interaction term between liking network closure and mistreatment, given that effect sizes are not sensitive to sample size and better represent the strength of association between variables (Wilkinson, 1999). The effect size for this interaction term was 0.10, exceeding the 0.02 threshold for small effect sizes stipulated by Cohen (1988). Furthermore, as evidenced by simple slope analyses, the nature of the moderation effect was in the predicted direction, such that when liking network closure was low (one *SD* below the mean), overall mistreatment was negatively related to job performance (β = -.45, *p* < .01), but when liking network closure was high (one *SD* above the mean), the mistreatment-to-performance relationship became non-significant (β = .19, *ns*).

------------ Insert Tables 3 and 4 about here ------------

DISCUSSION

This study demonstrates that third-party relationships and individuals' position in the larger social structure predict coworkers' mistreatment. An individual is more likely to be mistreated by a coworker when both parties are highly embedded in the workflow network, or when they have low embeddedness in the liking network. Furthermore, closure (or lack of brokerage) in the workflow network predicts more mistreatment, consistent with structural holes theory (Burt, 1992) that brokering relationships convey social capital that can deter mistreatment. While

closure in the liking network did not predict mistreatment, it attenuated the performance losses resulting from mistreatment.

The finding that workflow third-party embeddedness increased, rather than decreased, ego's mistreatment by alter deserves some discussion. Previous conceptualizations of third-party embeddedness emphasize the reputational and sanctioning mechanisms underlying embeddedness, and highlight the possibility of mutual third parties defecting from or terminating their ties to alter if alter mistreats ego. However, in the context of organizationally mandated workflow relationships, such defection may not be possible. While mutual third parties may choose to punish alter in other ways such as by withholding resources from alter, these actions may engender corresponding retaliatory moves by alter which can harm the third parties' own job performance, given their work interdependence. As such, the reputational and sanctioning mechanisms that constrain negative behaviors in triadic relationships may be limited in the context of formal workflow relationships.

Additionally, while third-party embeddedness is expected to engender greater cohesion and cooperation in the triad, this may be less likely in workflow relationships where two individuals' shared relationships with common third parties can, in fact, signify that both perform similar job roles and compete for similar work resources. As such, both parties may regard each other competitively rather than cooperatively (Burt, 1982), and in turn be more likely to harm and be harmed by the other party. In support for this argument, a previous study found that third-party embeddedness in the communication network did not enhance cooperative helping behaviors between two workers who shared mutual third-party relationships (Ferrin et al., 2006).

The findings relating to network closure also warrant discussion. First, low workflow network closure failed to weaken the negative relationship between overall mistreatment and job performance, which suggests that the inherent information and control benefits may not be realized into performance gains in every instance, such as when the individual lacks the necessary cognitive resources to devote to capitalizing on these benefits. Occupying a brokerage position in itself does not give the individual an immediate, realized performance gain. Rather, it provides the *opportunity* to mobilize the unique information and resources deriving from such a position to attain a performance advantage (Janicik & Larrick, 2005). In turn, mobilizing network resources requires the individual to utilize cognitive resources to consider, for instance, which holes to bridge, which people to connect, how to use the unique information to gain a competitive advantage at work, or when to capitalize on the opportunities that the position affords. Thus, the inability of workflow brokerage position to attenuate the performance losses of being mistreated suggests that these negative experiences, and the concomitant diversion of cognitive resources to deal with the experience, may have prevented the network benefits from being realized.

The results pertaining to liking network closure are also noteworthy. This structural position was, as predicted, beneficial in moderating the negative performance implications of mistreatment. However, it failed to inhibit individual experiences of dyadic mistreatment. While this relationship was premised on the notion that liking network closure would provide a supportive and protective coalition that deter others from harming the individual, the results indicate that the coalition failed as a deterrent, perhaps because such a coalition is built on interpersonal liking relationships and may lack concrete, instrumental power to punish others. Thus, when the coalition lacks opportunity or means to retaliate against mistreatment of its

members, high closure in such affect-based network would be ineffective in preventing

mistreatment. Rather, such a position can help the individual cope with performance losses after

being mistreated, and shows that a supportive network can provide social and emotional support

to buffer against negative outcomes from stressful experiences. More generally, the differences

in results found for third-party embeddedness and network closure across the two networks

support researchers' contention that both network structure and relationship content matter in

predicting work-based outcomes (e.g., Lincoln & Miller, 1979), including coworker

mistreatment.

Theoretical Implications

Overall, this study makes several conceptual contributions to our understanding of negative

interpersonal behaviors in the workplace. First, it illuminates the social structure of individuals'

vulnerabilities to interpersonal mistreatment by looking beyond individual and dyadic factors to

also consider the role of indirect, third-party relationships, which have been neglected in extant

literature. By demonstrating that broader systems of relationships can determine individuals'

propensities to be mistreated and also moderate the performance implications of such

mistreatment, this study offers a more holistic perspective to understanding and managing

negative workplace behaviors. Such an insight shifts blame from targets and perpetrators by

underscoring that other workplace actors also have roles and responsibilities in forestalling or

reducing such behaviors, opening a wider range of possible solutions for both workers and their

employers to manage such behaviors.

        This study also contributes to the literature on coworker mistreatment and

counterproductive behaviors by examining two distinct workplace relationships – formal

workflow exchange and informal liking ties – and providing a more nuanced understanding of third-party effects. Specifically, the same structural variable can, depending on the type of relationship being examined, exert different effects on mistreatment and, in turn, have different moderating effects on the relationship between mistreatment and performance. These findings not only deepen our understanding of both network structure and network content, but also indicate that organizations can operate through multiple relational routes to manage and limit negative interpersonal behaviors among employees.

Finally, the findings are observed in a Chinese-owned business in Singapore, which offers much needed insights into the antecedents and consequences of negative interpersonal behaviors in an Asian context, given that prior findings have been primarily derived from more individualistically-oriented Western firms (Aquino & Thau, 2009). This study integrates networks-based findings from both Western and Asian contexts and demonstrates that interpersonal mistreatment can occur in a relatively collectivistic society that is also one of the highest performance-oriented cultures emphasizing workplace achievement and accomplishment (Chhokar et al., 2007; Hofstede, 2001). While the collectivistic dynamics foster cooperative behaviors among workers, there are also competitive pressures to outperform others and demonstrate one's superior capabilities, rendering it unclear whether high network closure or brokerage would be more beneficial. The present study sheds light by demonstrating that brokerage in the workflow network is indeed useful in decreasing mistreatment, while closure in the liking network is effective in enhancing job performance as well as in tempering the detrimental effects of mistreatment on performance. The latter finding is similar to that in Xiao and Tsui's (2007) study examining interpersonal bonds, and offers corroborating evidence of the role of closure in the Asian context. At the same time, the present findings extend that study by

demonstrating that brokerage can also be valuable, particularly in the context of more formal, work-based networks. Thus, this study is the first to show that both closure and brokerage can be important in an Asian workplace, and that the nature of the network content is a key contingency factor, consistent with studies conducted in the West.

Practical Implications

The general findings that third-party relationships matter in predicting interpersonal mistreatment shifts blame from solely the targets or perpetrators, and highlight that other actors, including one's friends, coworkers, supervisors, and management, can counter mistreatment through several approaches. Regarding formal workflow relationships, organizations customarily design workflow patterns based primarily on task requirements. Organizations should, however, also consider unintended consequences of formal workflow design, particularly in relation to interpersonal mistreatment. For instance, considering that third-party embeddedness in the workflow network fuels mistreatment, organizations should consider ways to reduce overlap and redundancy in workflow design, such as by merging similar work roles into a broader role performed by one individual.

Also, while individual workers have less control over the formal workflow design, they can capitalize on the finding that third-party embeddedness in liking relationships diminishes interpersonal mistreatment, and embed themselves in triadic liking relationships with someone whom they exchange work resources. This could entail building personal ties between their work contact and one or more third-party contacts already bound with them in a liking relationship, or developing personal ties with third-parties whom their work contact has a pre-existing liking relationship. Developing those ties would not only embed them and their work contact in

multiple mutual third-party relationships but also, according to balance theory, increase the

likelihood that they would develop a direct liking relationship with the work contact (Heider,

1958).

Given that closure in the liking network not only enhances job performance but also

reduces the adverse performance effects of mistreatment, individuals should build mutual

connections between people in their liking network. When they can introduce a pair of

unconnected friends and help them develop personal ties, they ultimately increase the

connectivity, cohesion, and trust in the network, and the richer resources and social support

available can be instrumental in the ways evidenced in this study.

Limitations and Future Research Directions

A key strength of this study is the low risk of common method variance, given that the results are

derived from measures collected from different sources and using different formats (Podsakoff,

MacKenzie, Lee, & Podsakoff, 2003). While both dyadic and overall mistreatment variables

relied on self-reports, the third-party embeddedness and closure variables were derived by

combining self- and coworker-reports, and job performance were based on supervisor

evaluations. This provides confidence that the observed relationships are indeed valid and not

simply an artifact of common source bias. On the other hand, the use of cross-sectional data

precludes conclusions about the directionality of the relationships. While network characteristics

are proposed to influence mistreatment, the reverse causation where mistreatment drives these

network relationships cannot be ruled out. However, the latter scenario is less plausible given

that organizational design and the structure of work processes, rather than interpersonal

(mis)treatment, dictate the pattern of workflow relationships. Nonetheless, longitudinal research

that can track the development of dyadic and third-party relationships, the occurrence of

mistreatment, and job performance would be desirable.

Regarding sample size, the dyadic-level network analyses were conducted on a sample

size of 7,832 dyadic observations. At the individual level, however, the smaller sample of 89

may have reduced the statistical power in the regression analyses. Nonetheless, both main and

moderating effects were detected, suggesting that sample size is not a major threat (Aguinis,

1995). Furthermore, the effect size results, which are not sensitive to sample size, offer

additional confidence that the moderating effect is not trivial or unduly compromised by the

sample size. Supplementary analyses using Cook's distance and centered leverage values also

revealed low risk that one or more influential cases skewed the results (Cohen et al., 2002).

Overall, these serve to mitigate the sample size concern, although future research should attempt

to replicate the findings to further demonstrate their validity.

Future research is also needed to establish the mediating mechanisms through which

network characteristics relate to dyadic mistreatment, and moderate the mistreatment-to-

performance relationship. The present arguments are built on well-established, validated

perspectives on social capital and social networks, and because this is the first known study to

examine the link between third-party network features and interpersonal mistreatment, the focus

was on establishing whether these constructs are related in the first place. The next step would be

to extend the focus to the mediating mechanisms in this relationship, such as third-party

reputational costs, alter's perceived social constraints, and ego's informal network-based power.

Research that extends or replicates this study in other cultural settings within and beyond Asia

would also further validate the present findings.

CONCLUSION

In conclusion, this study introduces and tests a network-based model of interpersonal

mistreatment in an Asian Chinese context. The findings reveal that the larger social context in

which an individual and a coworker are embedded plays a role in shaping each party's likelihood

of being mistreated by the other, and in mitigating against the performance losses resulting from

mistreatment. In doing so, this study provides a network-based perspective that has yet to be

considered in extant studies on interpersonal counterproductive behaviors at work, and extends

our understanding and management of negative interactions in the workplace.

NOTE

[1] As supplementary tests, I also used betweenness centrality (Freeman, 1979) and constraint

measure to represent network closure, and the results were consistent with but statistically less

significant than those reported here.

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Table 1. Means, standard deviations, and correlations for dyadic-level network variables

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Supervisor similarity	0.07	0.25															
2. Department similarity	0.12	0.33	0.52**														
3. Gender difference	0.23	0.42	0.01	-0.01													
4. Age difference	0.00	10.73	-0.00	0.00	0.15*												
5. Rank difference	0.00	1.62	-0.00	0.00	0.21**	0.53**											
6. Education difference	0.00	1.66	0.00	0.00	0.00	-0.30**	0.27*										
7. Ego's trait anger	3.45	1.05	0.00	-0.01	-0.03	-0.04	-0.05	0.04									
8. Alter's trait anger	3.45	1.05	0.00	-0.01	0.02	0.04	0.05	-0.04	-0.01**								
9. Resources provided by ego to alter	0.42	0.79	0.27*	0.29**	0.06*	-0.04	0.01	0.00	0.06	0.03							
10. Resources received by ego from alter	0.42	0.79	0.27*	0.29**	-0.03	0.04	-0.01	0.00	0.03	0.06	0.44**						
11. Alter's liking for ego	0.36	0.75	0.17**	0.18**	-0.05*	0.00	-0.04	-0.03	-0.00	-0.14**	0.29**	0.42**					
12. Third-party embeddedness in workflow network	2.41	3.11	0.17**	0.15**	0.03*	0.00	0.00	0.00	0.06	0.06	0.47**	0.47**	0.31**				
13. Third-party embeddedness in liking network	1.30	2.06	0.10**	0.07**	0.01	0.00	0.00	0.00	0.03	0.03	0.24**	0.24**	0.42**	0.50**			
14. Workflow network closure	70.03	67.64	0.01	-0.01	0.24**	0.04	0.15*	0.04	0.17	-0.00	0.30**	0.05**	0.02	0.39**	0.19**		
15. Liking network closure	60.93	45.12	0.00	-0.03*	-0.04	0.10	0.05	-0.03	-0.01	0.00	0.05	0.14**	0.23**	0.24**	0.28**	0.08	
16. Dyadic mistreatment	0.03	0.23	0.04**	0.04**	0.00	-0.04*	-0.03	0.02	0.06*	0.02	0.10**	0.08**	0.02	0.11**	0.03	0.10**	0.00

*$p < 0.05$; **$p < 0.01$

Table 2. Results of quadratic assignment procedure predicting dyadic mistreatment[†]

	Model 1	Model 2
Control variables		
Supervisor similarity	-0.01	-0.00
Department similarity	0.01	0.01
Gender difference	-0.00	-0.01
Age difference	0.01	0.01
Rank difference	-0.04*	-0.04*
Education difference	0.03	0.03
Ego's trait anger	0.05*	0.04*
Alter's trait anger	0.03*	0.02*
Resources provided by ego to alter	0.05**	0.05**
Resources received by ego from alter	0.03*	0.03*
Alter's liking for ego	-0.05**	-0.04**
Independent variables		
Third-party embeddedness in workflow network		0.05*
Third-party embeddedness in liking network		-0.03*
Workflow network closure		0.05*
Liking network closure		-0.01
R^2	0.02**	0.03**
ΔR^2	-	0.01

[†] Standardized regression coefficients are presented.

* $p < 0.05$; ** $p < 0.01$

Table 3. Means, standard deviations, and correlations for individual-level variables

Variables	Mean	s.d.	1	2	3	4	5	6	7
1. Gender	0.34	0.48							
2. Education	4.17	1.17	-0.00						
3. Age	33.40	7.59	0.19	-0.30**					
4. Rank	2.30	1.14	0.26*	0.27*	0.53*				
5. Overall mistreatment	2.90	1.34	-0.01	0.10	-0.16	0.15			
6. Workflow network closure	70.03	67.64	0.34**	0.10	0.09	0.25*	0.30**		
7. Liking network closure	60.93	45.12	-0.05	-0.05	0.14	0.07	-0.06	0.06	
8. Job performance	3.10	0.87	-0.21	0.24*	-0.01	0.24*	-0.11	0.09	0.33**

*$p < 0.05$; **$p < 0.01$

Table 4. Results of hierarchical moderated regression analyses predicting job performance[†]

|	Model 1	Model 2	Model 3	Model 4
Gender	-0.25*	-0.29*	-0.20*	-0.22
Education	0.13	0.09	0.09	0.07
Age	-0.08	-0.17	-0.13	-0.13
Rank	0.30*	0.37*	0.29*	0.31*
Overall mistreatment		-0.27*	-0.13	-0.14
Workflow network closure		0.15		0.07
Liking network closure			0.35**	0.34**
Overall mistreatment * workflow network closure		0.07		0.03
Overall mistreatment * liking network closure			0.28*	0.27*
R^2	0.17*	0.23*	0.35**	0.37**
ΔR^2 from Model 1	-	0.06	0.18**	0.20**

[†] Standardized regression coefficients are presented.

* $p < 0.05$; ** $p < 0.01$

Figure 1. Networks illustrating third-party embeddedness and network closure
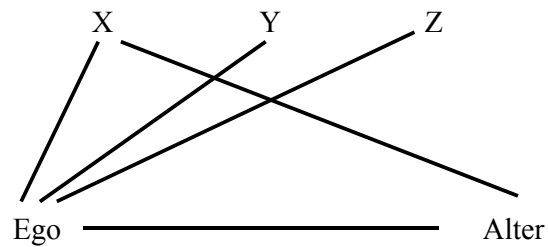
- Third-party embeddedness between ego and alter = 1 (X is the only common third-party with whom both ego and alter have a relationship)

- Ego's closure = 1 (Of ego's 4 contacts, only 1 pair, X and alter, is connected to each other)
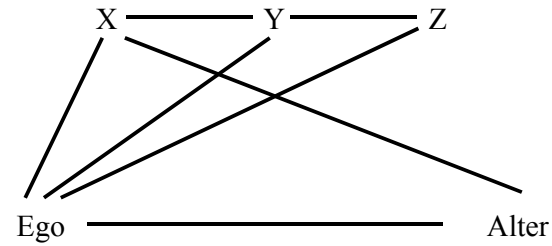
- Third-party embeddedness between ego and alter = 1 (X is the only common third-party with whom both ego and alter have a relationship)

- Ego's closure = 3 (Of ego's 4 contacts, 3 pairs are connected to each other - X and Y; Y and Z; and X and alter)