Performance outcomes from reciprocal altruism: a multi-level model

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ABSTRACT
In recent years, many small- and medium-sized firms have joined formal strategic networks in an effort to enhance firm performance. We set out to examine how altruistic behavior by these firms affected their performance at different levels of altruistic norms within their network. Using a multi-level analytic approach and data from a population of Swedish strategic networks, we found significant cross-level moderating effects that explained variance in firm-level performance. The results showed that firms participating in strategic networks benefit more from being altruistic when other network members generally display high levels of altruism. Apparently, altruistic behaviors are rewarded relative to a general network norm. The potential to perform well thus depends on aligning a firm’s altruistic behavior with the general level of altruism in its network.

MOTS-CLÉS
Altruisme; comportement du citoyen; conformité; performance; réseau stratégique

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1. An introduction to strategic networks

Several studies conducted in recent years have found that small- and medium-sized firms have been joining formal strategic networks to strengthen firm performance. Strategic networks are intentionally formed groups of partly independent, profit-oriented small and medium sized enterprises (SMEs) that cooperate to improve innovative performance both through multilateral, intranetwork technology and through know-how exchange and the development of new products or services (Human and Provan 1997).

Scholars have suggested several arguments for this trend. For example, Jarillo (1986) argued that strategic networks reduce the costs of membership firms. Johnston and Lawrence (1988) argued that membership in strategic networks can add value and reduce transaction costs for a firm. Gulati (1995a, 1995b) argued that membership in a strategic network can reduce a firm’s exposure to uncertainty, risk, and opportunism. Finally, Stuart (2000) argued that firms participating in strategic networks can obtain resources and gain legitimacy.

Results from several studies indicate that firms can indeed gain performance advantages and become more competitive by participating in strategic networks (Das and Teng 1998, 2002). Chaston (1995) described a study conducted by the Danish Technological Institute on behalf of the Danish government. The purpose of this study was to see whether the creation of strategic networks could provide a mechanism by which the survival and growth of small firms might be ensured. The study concludes that over the years 1989–1991, more than 2,000 Danish firms joined or created 250 networks. In a follow-up study, Chaston (2000) reported that a substantial share of Danish firms subscribed to formal networks by the end of last millennium. The studies performed in Denmark show an increasing interest from policy and firms to organize in formal network settings. The trend for small- and medium-sized enterprises to organize in formal networks has spurred other researchers to investigate the interest in other countries and many European countries show similar trends (Hanna and Walsh 2002, 2008).

In an attempt to clarify the effects of strategic networks, Human and Provan (1997) examined the characteristics of those networks. Three common characteristics were found. First, firms that belong to the same network tend to be located near to one another. Second, member firms typically operate within the same industry, and thus may share inputs and outputs. Finally, member firms often interact with each other to achieve specific business outcomes. These interactions typically involve ad hoc projects involving process, product, or technological innovation (Wincent et al. 2010a; Wincent et al. 2010b).

One example of a strategic network is YWOOD, a Swedish network with approximately 50 member firms. All of these firms focus on the wood industry and are located in one county in Sweden. They joined together to provide competitive product offerings to large global retailers and to collaborate on projects that will improve manufacturing technology and help to develop new products. One example of a product that has been developed by this network is a balcony made from glulam beams, which can be used to construct wooden rather than concrete balconies for large apartment complexes. This reduces the overall costs for constructing balconies and has provided many new jobs for the wood industry and the involved firms.
Although the general goal of participating in a strategic network is to improve firm performance and competitiveness, such participation is not without challenges (Wincent, Anokhin, and Örtqvist 2010). Member firms mainly operate within the same industry and so must maintain a balance between simultaneous cooperation and competition (cf. ‘coopetition’ by Bengtsson and Kock 2000). This is especially difficult given that projects and activities within the networks are often conducted on an ad-hoc basis – different actors cooperate with each other on some projects and are otherwise unrelated or even competitors. In this study, we examined the specific role of altruistic behavior toward network members as a factor in firm performance within strategic networks. Such behavior implies a cost for the altruistic firm and a benefit for firms to which the behavior is directed – the contributor does not expect immediate compensation for its acts, and may not ever receive any compensation (see Banki 2010; Brosnan and Waal 2003; Fehr and Fischbacher 2003). Both general and specific exchanges can occur among the firms within a strategic network. Firms engage in generalized exchanges (Yamagishi and Cook 1993) by investing time and effort in performing activities for the network as a whole. For example, a firm might inform everyone else in its network about an upcoming opportunity that any of them could pursue. Firms also engage in specific exchanges by investing time and effort in order to help specific network partners. For example, a firm might lend equipment and personnel to some other firm in the network. In attempting to understand the performance returns from performing altruistic acts, we felt it was important to pay attention to the social context (the strategic network) in which such acts occur. Scholars interested in citizenship behaviors (a form of altruism among individuals workers) have recently suggested that those behaviors should be analyzed at multiple levels (see Bonner, Dierdorff, and Rubin 2007; Schnake and Dumler 2003). Therefore, we developed and tested a theoretical model in which the ability of a member firm to benefit from participation in network activities depends on both its own altruistic behavior and the altruism norms of the strategic network to which the firm belongs. We believe that this model contributes to our understanding of how and why firms gain from cooperation within strategic networks.

Although there is an extensive literature on citizenship behaviors in organizations, and on altruism more generally, most of the research has investigated these things entirely at the individual level (Podsakoff et al. 2000), neglecting the social context and dynamics that might be revealed by a multi-level conceptualization (Schnake and Dumler 2003). Rousseau (1985) argued persuasively that most forms of organizational behavior are inherently multi-level. Yet few studies have focused on the antecedents and consequences of citizenship behavior at different levels of analysis. Some exceptions are the work by Podsakoff, Ahearne, and MacKenzie (1997), and Koys (2001), who found that citizenship behaviors within work units were related to organizational profits. Furthermore, Dugatkin and Reeve (1994) argued the interaction between an actor and his or her social context may be important for understanding the evolution and implications of altruism. Therefore, a multi-level conceptualization may clarify the relationship between firm altruism and performance. In particular, multi-level analyses of the simultaneous and interactive influences that firm-level altruistic behavior and network-level altruism norms can have on firm performance might improve our understanding of when altruistic behaviors will be rewarded.
2. Cooperative behavior, cooperative norms, and firm performance

Performing altruistic behavior implies providing benefits to others without expecting immediate returns. Studies of such behavior have often argued (and empirically established) that altruism has a strong positive relationship to performance. At the same time, several explanations have been proposed in relation to how altruism strengthens performance. At one end, researchers have investigated altruism at the level of individuals, whereas performance was measured at the group or organizational levels (Podsakoff, Ahearne, and MacKenzie 1997). In this line of research, there has been few attempts to empirically test whether the effects of altruism extend back to the actor. Rather, it has been assumed that individuals who perform altruistic acts invest time and effort in helping others at the expense of their own task performance (Bergeron 2007). As such, altruistic behavior has benefited the group but not the individual actor.

Another strand in the literature suggest that engaging in citizenship behaviors can have positive effects on a person’s own performance. Already Trivers (1971) suggested that altruistic acts often lead to reciprocated favors, which can yield a net gain for the original benefactor. This implies that performing good deeds in strategic networks might lead to reciprocated favors and hence contribute to the performance also on the individual level. There is indeed empirical support for a positive relationship between altruism and performance in the literature (see, for instance, MacKenzie, Podsakoff, and Fetter 1991, 1993).

Arguments drawn from the organizational citizenship literature suggest that altruistic behavior by a firm can also enhance morale within a strategic network and thereby reduce the need for various network maintenance functions (see Podsakoff et al. 2000). Firms that engage in altruistic acts may also be viewed as better business partners, in part because less relational management would be needed in such partnerships. Although performing altruistic acts might seem to make a firm more vulnerable to exploitation, it has also been argued that altruists can safeguard themselves by adopting conditional strategies that reduce their risks of being exploited (Stevens and Hauser 2004). These strategies involve such issues as whom to cooperate with and how to respond to cooperative acts by others. Some studies of altruism have found that in order to ensure that altruistic acts are reciprocated, actors may choose to work with partners who are likely to return favors (cf. kinship selection strategies), or adopt tit-for-tat strategies (Axelrod and Hamilton 1981) that involve punishing cooperative partners who do not reciprocate altruistic acts. By adopting such strategies firms can ensure that their good acts are rewarded, even when no contracts exist to guarantee such rewards.

All of this suggests that there should be a positive relationship between a firm’s altruistic behavior and its performance:

Hypothesis 1. Firms that engage in altruistic behavior within strategic networks will strengthen their own performance as a result.

Besides being a firm behavior, altruism can also be conceptualized at a network-level as a behavioral norm with the potential to affect firm performance. A norm is a guideline about acceptable behavior that has been informally endorsed by members
of the network (Naumann and Ehrhart 2011). We argue that network norms should be influential for member firm performance as the network is one of the most immediate social contexts in which the firm acts. Thus, the characteristics and cooperative behavior of network members can be expected to influence the performance of a given firm through downward contextual influence (Kozlowski and Klein 2000). Some firms belong to networks whose members perform many altruistic acts, whereas other firms belong to networks where altruistic acts are seldom performed. Studies have shown that actors performing altruistic acts are generally inclined to display pro-social behavior across situations and over time (Oliner and Oliner 1988). Such results indicate that altruistic acts can become behavioral norms in groups, which support our perspective of viewing network-level altruism as a behavioral norm. Following such arguments, it is likely that networks develop and maintain norms that guide the altruistic behavior of their members (Ehrhart and Naumann 2004).

We argue that firms experience performance gains when they belong to strategic networks with stronger altruistic norms. In networks with more altruistic members, there will be more firms that are prepared to help others, and more careful exploitation of common resources. Several studies have found that altruism is one motive behind volunteering (Unger 1991), suggesting that in a network where altruism is more common, it would be easier to find firms that will volunteer help when needed, and thereby secure performance.

A network characterized by a strong altruistic norm is probably less susceptible to social loafing and free-riding problems (cf. Liebrand 1984). Firms that belong to networks with higher altruistic norms have a better chance of recouping any time and effort that they have invested in those networks. In sum, strategic networks with higher levels of altruistic behavior allow firms to pool their resources, to gain legitimacy (Stuart 2000), and to reduce their costs (Jarillo 1986) and risks (Gulati 1995a, 1995b). Therefore, we propose a positive relationship between network-level altruism and firm-level performance:

Hypothesis 2. Strategic network norms that favor altruism will be positively related to member firm performance.

The effects described in our first two hypotheses may well be interdependent. Previous studies have found that job performance is dependent on the interactive influence of individual- and group-level attitudes and behaviors. For instance, Grey and Kipnis (1976) found that compliant individuals who adjusted their work attitudes to the group norm performed better than did non-compliant individuals. Similar findings can be found in developmental psychology (see, e.g. Boivin, Dodge, and Coie 1995; Wright, Giammarino, and Parad 1986). We thus propose that firms participating acting in strategic networks with high altruistic norms will gain more from altruistic behavior than will firms participating in strategic networks whose norms for altruism are lower.

One explanation for why compliance with group norms influences performance is provided by Deutsch and Gerard (1955). They argue that group norms influence members to conform to those norms, due to a fear of social censure and rejection or for believing that what others do is the correct way to act (see Abrams et al. 1990, Insko et al. 1983). In a strategic network characterized with high altruistic norms,
firms would thus engage in altruistic behaviors because they note that others do the same and perceive it to be the correct way to behave and to avoid missing out on activities and projects that might be valuable for them.

It is likely that when a firm conform to the network norms for altruism, other firms in the network will become more helpful as they recognize and trust acts that are in accordance with the norms. In performing in an expected way a firm can thus be more likely to succeed. This led us to predict that:

Hypothesis 3. The level of firm performance gained from cooperative behaviors in form of altruism in strategic networks will be higher in strategic networks that have a norm that favor high levels of altruism.

3. Methods

3.1. Sample and data collection procedures

Our hypotheses called for a sample of firms that cooperate in networks. An appropriate sample should thus contain enough networks to examine cross-network variance in altruism and the effect of network norms on firm-level performance. At the same time, it should also contain enough network members and responses to assess altruistic norms. To create such a dataset, we followed a three-step procedure. The first step was to identify the Swedish population of strategic networks. The second step was to contact those networks and gather information about them. The third step was to survey members of the identified networks.

We began by contacting Swedish organizations that seemed likely to be in contact with strategic networks (as described by Human and Provan 1997). We performed telephone interviews with representatives from regional county administrative boards, industrial development centers (IUCs), and the Swedish state-owned development company (ALMI Företagspartner), all in an effort to identify a national population of strategic networks. In total, 53 active Swedish strategic networks were identified with a total of 1,431 member firms. Next, we contacted each of the networks that we identified to obtain some background information about it, a list of its member firms, and contact information for those firms.

The 53 strategic networks are located in various parts of Sweden and a variety of industries are represented including tourism, manufacturing, and telecom to give a few examples. The strategic networks vary in size with the smallest having 4 members and the largest having up to 165 members according to membership registers. The average network had 27 member firms.

Finally, we mailed out a standardized questionnaire to representatives of all member firms of the 53 strategic networks we identified. The questionnaire contained (with in-group variation in item order) background information on the member firms, scales to assess citizenship behaviors, entrepreneurial orientation, network satisfaction, and firm performance. Participants were promised confidential treatment of their responses. We surveyed the CEO at each firm within the 53 networks. This approach is common in research on networks in small- and medium-sized firms, where the CEO is usually well-informed about everyday operations in the firm. Two
follow-ups were made to increase the response rate. Each was done approximately one month after the last survey was mailed out. After two follow-ups, we had responses from 612 of the 1,431 surveyed firms (a response rate of 43%). We analyzed and cleared the responses from members that had been inactive for several years or had not participated at all in any of the network activities. In doing so, we retained 141 responses for analysis and re-estimated the population size by subtracting responses of ‘no membership’. We found responses to be fairly well distributed over the networks, and the response rate for each separate network varied between 17% and 75%, with an average of 40%.

### 3.2. Measures

Firm altruism was a three-item measurement developed by MacKenzie, Podsakoff, and Fetter (1991). This scale has shown previous evidence of reliability and validity (see MacKenzie, Podsakoff, and Fetter 1993). The three items were: ‘We have helped other firms in the network even if it has not been directly requested’, ‘We have been readily available to lend a helping hand to other firms in the network’, and ‘We have willingly invested time in helping other firms in the network’. Respondents rated their agreement with each item on a seven-point Likert scale that ranged between 1 = ‘strongly disagree’ and 7 = ‘strongly agree’.

Firm performance, in the context of the network, was measured using another three-item scale, one originally developed by Saxton (1997). This measure has also shown evidence of reliability and validity (see Kale, Dyer, and Singh 2002). The three items were: ‘Overall, we are very satisfied with the performance from the network’, ‘Our membership has helped us realize goals we have set out to achieve’, and ‘Our membership has contributed to our core competencies and competitive advantage’. Once again, respondents rated their agreement with each item on a seven-point scale that ranged from 1 = ‘strongly disagree’ to 7 = ‘strongly agree’.

### 4. Results

Before testing our hypotheses, we explored the factorial structure and the convergent and discriminant validity of the data through exploratory and confirmatory factor analyses. Exploratory factor analysis was performed using a generalized least squares extraction method and an oblimin with Kaiser normalization rotation method. The six items yielded two factors, both with eigen values exceeding 1.00. Factor loadings for the items associated with altruism ranged between 0.84 and 0.89. Factor loadings for the items associated with performance ranged between 0.69 and 0.97. No cross loadings above 0.30 were reported. The correlation between the two factors was 0.55, which is well within conventional limits for discriminant validity and indicates that the threat of multicollinearity was low (a general rule of thumb is that correlations should not exceed 0.70 where more than 50 percent of the variance is explained). Furthermore, reliability statistics showed internal consistency for the items associated with each factor (α > 0.80). Composite indices of altruism and performance were calculated by averaging the item ratings for the respective factors.
Descriptive statistics, see Table 1, for the two latent constructs show that firm performance average at 4.27 with a standard deviation of 1.39 and that firm altruism averages at 4.47 with a standard deviation of 1.41 in the studied sample. Both latent constructs show a variation over the entire scale with the lowest response at 1.00 and the highest at 7.00.

Before proceeding to tests of hypotheses we performed tests of non-response bias. We randomly selected one network for which we collected objective data for all its member firms. Through official records – the Swedish database Affärssdata – we were able to gather and analyze financial statements and number of employees for all the network members, respectively. Based on $t$ tests we found no significant differences between the respondents and the non-respondents in sales ($p = 0.24$), profitability ($p = 0.86$), or number of employees ($p = 0.34$) for the network examined.

Testing our hypotheses required a multi-level approach, one in which firm- and network-level variances were modeled as factors that might influence firm outcomes. Therefore, multi-level mixed-effects linear regression analyses were performed, using STATA.

Following the recommendations by Rabe-Hesketh and Skrondal (2005) and others, we performed hierarchical multi-level mixed-effect regression analyses. Three models were tested; the results are reported in Table 2.

Model 1 is a base model estimating the intercept for the fixed and random effects. According to the results of Model 1, the average performance across networks, reflected in the intercept term, was 4.31 on the 7-degree scale. This implies that respondents in average agreed to some extent with the performance statements included in the survey. The variance component corresponding to the random intercept (the intercept belonging to the network level) was 0.16. Because the standard error of the random effects intercept did not exceed the coefficient of the same intercept, there appeared to be significant variation in network means. In fact, an estimation of the intra-class correlation coefficient revealed that roughly 8% of the variance was attributable to the network level.

To explain some of the network-level variance in performance, we incorporated a network-level predictor, in the form of mean altruism, into a second model. Model 2 revealed that a one-unit increase in the average altruism score was associated with an expected increase in firm performance of 0.29 on the 7-degree scale. Although this estimate was not substantial, in relation to the mean performance score, it was significant. This implies that firms perform better the higher the levels of average altruism are within their networks. Thus, these results provided support for Hypothesis 2.

Model 3 introduced firm-level altruism. Because it is possible that the effect of firm-level altruism varies across networks, this slope was set to random. According to our hypothesis, we expected that the network norm for altruism influences firm-level

### Table 1. Univariate statistics and Pearson correlations among scales.

| Variables     | Mean | s.d. | 1  | 2   |
|---------------|------|------|----|-----|
| 1. Performance| 4.27 | 1.39 | 1.00 |     |
| 2. Altruism   | 4.47 | 1.41 | 0.55*** | 1.00 |

*p < 0.05.

**p < 0.01.

***p < 0.001.
altruism, accounting for some of the variance in the slope. Results revealed that the intercept was 4.29 on the 7-degree scale, the expected performance in a strategic network (whose overall level of altruism was average) for a firm whose level of altruism was average for its network.

Because there were interactions in the model, the marginal fixed effects of each variable depended on the value(s) of the other variable(s) involved in the interaction. The marginal effect on firm performance of a one-unit change in firm-level altruism depended on the average level of altruism within the network to which the firm belonged. The simplest interpretation of the interaction is that the effect of firm-level altruism is significantly higher in networks with higher levels of altruism. To further interpret this interaction, we plotted it in a graph (see Figure 1). We followed the guidelines offered by Aiken and West (1991) for preparing such graphs. So, the ‘low’ mean was calculated one standard deviation below the mean and the ‘high’ mean was calculated one standard deviation above the mean. Simple slope analyses revealed that the slope for the high level of network altruism was positive and significant (slope = 3.33; p < 0.01), whereas the slope for the low level of network altruism was negative and non-significant (slope = −0.64; p > 0.05). We evaluated the goodness of fit for the three models tested using the Akaike (AIC) and the Bayesian (BIC) information criterion. Overall, model fit statistics indicate that Model 3 including the interaction of firm and network level altruism has a better fit to the data compared to Models 1 and 2.

5. Discussion

In the last few decades, scholars and policy makers have focused on the potential benefits of strategic networks for strengthening the competitive position of small- and medium-sized firms. Many potential benefits of membership in such networks have been mentioned in the literature, but there has been little interest in how firms
should behave in networks if they want to achieve the greatest membership benefits. In this study, we used literature on citizenship behavior, group norms, and conformity to develop and test arguments for how altruistic behavior by firms can be beneficial in strategic networks. The results indicated that firms performing altruistic acts experienced increases in their own performance, and especially when they conformed to the altruistic norms of their networks. These results hold several implications for research on strategic networks and citizenship behavior.

For research on strategic networks this study reveals that citizenship behaviors can be used as networking strategies and to improve firm performance and outcomes from networking activities. The results indicate that being nice is not always a good strategy but rather that adopting a strategy close to the norms in the network. This study also has implications for citizenship behavior studies in showing that such behaviors have a function also in more loosely formed groups of firms. So such behaviors are not working within organizations on individual level but also between firms in network organizations.

In recent years, it has become more common for firms to join strategic networks, in order to enhance firm performance and competitiveness (Hanna and Walsh 2008). These networks form higher-order organizational settings where firms must develop strategies for handling simultaneous cooperation and competition. Our study is one of the first to adopt ideas from the organizational citizenship literature to show how performing altruistic acts can influence a firm’s outcomes in these settings. Further, this study has also contributed by developing a scale for measuring firm altruism, which made it possible to assess network norms for altruism. The altruism scale is based on modification from existing altruism scales (MacKenzie, Podsakoff, and Fetter 1991) which have been contextualized to fit at a firm level. However, the nature of the altruistic acts is one thing that future studies could examine in more detail. Such examinations could include focus on the costs associated with whatever acts are performed and on how long it takes before such costs are recouped. Helpful

Figure 1. Interaction of firm- and network-level altruism on performance. Note: Low and High corresponds to ±1 SD.
acts may be performed to gain greater benefits from network membership. Future studies could also benefit from studying at what time span effects of performing altruistic acts actually influence firm performance. To avoid this to be a problem in the current study design, we adopted a subjective measure of performance from participation in network activities. As such we could ask the manager of the firm how they experienced their performance development over time rather than relying on a measure of one-year sales development for instance. An advantage with adopting a subjective performance measure is that it can capture effects at an early stage as the manager can assess the performance development before it becomes visible in the firm bookkeeping. However, future studies should attempt to investigate objective performance measures over time to find out when firms gain from performing altruistic acts and to rule out the potential for reversed causality. It seems possible that the relationship between altruistic behavior and performance is bi-directional, such that firms that increase their performance by being altruistic, and so they continue to be altruistic in order to gain even more performance benefits. Future studies could adopt a cross-lagged design to investigate whether the relationship between altruism and performance follows a regular causality where altruism influence performance, a reverse causality where performance influence altruism, or a reciprocal causality where altruism and performance each leads to increases in the other variable.

One interesting finding from our simple slope analyses is that only the slope for the high level of network-level altruism was significant. This implies that we found significant evidence for that there is a benefit to conform to network norms in networks with strong norms for altruistic behavior but not necessarily the same in networks with low network-level norms for altruism. This is a surprising finding that may imply that altruistic behavior doesn’t always matter for the performance of firms in such contexts. Further testing is required to investigate the role of firm behavior in networks with low altruistic norms.

Despite its contributions, our study is not exempt from limitations. For example, we used a cross-sectional design, which made it difficult to be sure about the causal directions of the relationships that we examined. Future studies may benefit from longitudinal designs that can better reveal causality. Future studies could gain from testing these results in larger samples. This study had a ratio of observations to indicators was well in line with recommendations (Bentler and Chou 1987), and above suggested the minimum levels for causal modeling (Bollen, 1989). However, future studies could gain from larger sample sizes, which would enable for more detailed analyses and for higher complexity in research models. The present study has, due to its limitations in sample size, not included control variables. This is a potential limitation as other influential variables may be omitted from analyses. However, the effects of the present variables were significant and accounted for substantial variance. Future studies could make a contribution in exploring the results from this study in light of a set of control variables.

Because our study concerned strategic networks in one specific cultural context, care should be taken in generalizing the findings to other contexts. The Swedish context is similar to other European contexts, but it is a bit different from the American context, in that the Swedish government is more involved in supporting business
activities and industrial development, just like the Danish government (see Chaston 1995).

**Disclosure statement**

No potential conflict of interest was reported by the author.

**Notes on contributor**

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**References**

Abrams, D., M. S. Wetherell, S. Cochrane, M. A. Hogg, and J. C. Turner. 1990. “Knowing What to Think by Knowing Who You Are: Self-Categorization and the Nature of Norm Formation, Conformity, and Group Polarization.” *British Journal of Social Psychology* 29(2): 97–119.

Aiken, L. S., and S. G. West. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage.

Axelrod, R., and W. D. Hamilton. 1981. “The Evolution of Cooperation.” *Science* (New York, N.Y.) 211(4489): 1390–1396.

Banki, S. 2010. “Is a Good Deed Constructive Regardless of Intent? Organization Citizenship Behavior, Motive, and Group Outcomes.” *Small Group Research* 41(3): 354–375.

Bengtsson, M., and S. Kock. 2000. “Coopetition” in Business Networks: To Cooperate and Compete Simultaneously.” *Industrial Marketing Management* 29(5): 411–426.

Bentler, P. M., and C. P. Chou. 1987. “Practical Issues in Structural Modeling.” *Sociological Methods & Research* 16(1): 78–117.

Bergeron, D. M. 2007. “The Potential Paradox of Organizational Citizenship Behavior: Good Citizens at What Cost?” *Academy of Management Review* 32(4): 1078–1095.

Boivin, M., K. A. Dodge, and J. D. Coie. 1995. “Individual-Group Behavioral Similarity and Peer Status in Experimental Play Groups of Boys: The Social Misfit Revisited.” *Journal of Personality and Social Psychology* 69(2): 269–279.

Bollen, K. A. 1989. *Structural Equations with Latent Variables*. New York: Wiley.

Bommer, W. H., E. C. Dierdorff, and R. S. Rubin. 2007. “Does Prevalence Mitigate Relevance? the Moderating Effect of Group-Level OCB on Employee Performance.” *Academy of Management Journal* 50(6): 1481–1494.

Brosnan, S. F., and F. B. M. Waal. 2003. “A Proximate Perspective on Reciprocal Altruism.” *Human Nature* 13(1): 129–152.

Chaston, I. 1995. “Danish Technological Institute SME Sector Networking Model: Implementing Broker Competencies.” *Journal of European Industrial Training* 19(1): 10–17.

Chaston, I. 2000. *Entrepreneurial Marketing*. London: Macmillan Business.

Das, T. K., and B. S. Teng. 1998. “Between Trust and Control: Developing Confidence in Partner Cooperation in Alliances.” *The Academy of Management Review* 23(3): 491–512.

Das, T. K., and B. S. Teng. 2002. “Alliance Constellations: A Social Exchange Perspective.” *Academy of Management Review* 27(3): 445–456.

Deutsch, M., and H. B. Gerard. 1955. “A Study of Normative and Informational Social Influences upon Individual Judgment.” The Journal of Abnormal and Social Psychology 51(3): 629–636.
Dugatkin, L. A., and H. K. Reeve. 1994. “Behavioral Ecology and Levels of Selection: Dissolving the Group Selection Controversy.” Advances in the Study of Behavior 23: 101–133.

Ehrhart, M. G., and S. E. Naumann. 2004. “Organizational Citizenship Behavior in Work Groups: A Group Norms Approach.” Journal of Applied Psychology 89(6): 960–974.

Fehr, E., and U. Fischbacher. 2003. “The Nature of Human Altruism.” Nature 425(6960): 785–791.

Grey, R. J., and D. Kipnis. 1976. “Untangling the Performance Appraisal Dilemma: The Influence of Perceived Organizational Context on Evaluative Processes.” Journal of Applied Psychology 61(3): 329–335.

Gulati, R. 1995a. “Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances.” Academy of Management Journal 38: 85–112.

Gulati, R. 1995b. “Social Structure and Alliance Formation Pattern: A Longitudinal Analysis.” Administrative Science Quarterly 40(4): 619–652.

Hanna, V., and K. Walsh. 2002. “Small Firm Networks: A Successful Approach to Innovation?” Re-D Management 32(3): 201–207.

Hanna, V., and K. Walsh. 2008. “Interfirm Cooperation among Small Manufacturing Firms.” International Small Business Journal: Researching Entrepreneurship 26(3): 299–321.

Human, S. E., and K. G. Provan. 1997. “An Emergent Theory of Structure and Outcomes in Small-Firm Strategic Manufacturing Networks.” Academy of Management Journal 40: 368–403.

Insko, C., S. Drenan, M. R. Solomon, R. Smith, and T. J. Wade. 1983. “Conformity as a Function of the Consistency of Positive Self-Valuation with Being Liked and Being Right.” Journal of Experimental Social Psychology 19(4): 341–358.

Jarillo, J. C. 1986. Entrepreneurship and Growth: The Strategic Use of External Resources. Boston, MA: Harvard Business School.

Johnston, R., and P. R. Lawrence. 1988. “Beyond Vertical Integration: The Rise of Value Adding Partnership.” Harvard Business Review July-August, 54–68.

Kale, P., J. H. Dyer, and H. Singh. 2002. “Alliance Capability, Stock Market Response, and Long-Term Alliance Success: The Role of the Alliance Function.” Strategic Management Journal 23(8): 747–767.

Koys, D. J. 2001. “The Effects of Employee Satisfaction, Organizational Citizenship Behavior, and Turnover on Organizational Effectiveness: A Unit-Level Longitudinal Study.” Personnel Psychology 54(1): 101–114.

Kozlowski, S. W. J., and K. J. Klein. 2000. “A Multilevel Approach to Theory and Research in Organizations: Contextual, Temporal, and Emergent Processes.” In Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions, edited by K. J. Klein and S. W. J. Kozlowski, 3–90. San Francisco, CA: Jossey-Bass.

Liebrand, W. B. G. 1984. “The Effect of Social Motives, Communication and Group Size on Behaviour in an N-Person Multi-Stage Mixed-Motive Game.” European Journal of Social Psychology 14(3): 239.

MacKenzie, S. B., P. M. Podsakoff, and R. Fetter. 1991. “Organizational Citizenship Behavior and Objective Productivity as Determinants of Managerial Evaluations of Salespersons’ Performance.” Organizational Behavior and Human Decision Processes 50(1): 123–150.

MacKenzie, S. B., P. M. Podsakoff, and R. Fetter. 1993. “The Impact of Organizational Citizenship Behavior on Evaluations of Salesperson Performance.” Journal of Marketing 57(1): 70–80.

Naumann, S. E., and M. G. Ehrhart. 2011. “Moderators of the Relationship Between Group Helping Norms and Individual Helping.” Small Group Research 42(2): 225.

Oliner, S., and P. Oliner. 1988. The Altruistic Personality. New York: The Free Press.

Podsakoff, P. M., M. Ahearne, and S. B. MacKenzie. 1997. “Organizational Citizenship Behavior and the Quantity and Quality of Work Group Performance.” Journal of Applied Psychology 82(2): 262–270.
Podsakoff, P. M., S. B. MacKenzie, J. B. Paine, and D. G. Bachrach. 2000. “Organizational Citizenship Behavior: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research.” *Journal of Management* 26(3): 513–563.

Rabe-Hesketh, S., and A. Skrondal. 2005. *Multilevel and Longitudinal Modeling Using Stata*. College Station, TX: Stata Corporation.

Rousseau, D. M. 1985. “Issues of Level in Organizational Research: Multi-Level and Cross-Level Perspectives.” *Research in Organizational Behavior* 7: 1–37.

Saxton, T. 1997. “The Effects of Partner and Relationship Characteristics on Alliance Outcomes.” *Academy of Management Journal* 40(2): 443–461.

Schnake, M. E., and M. P. Dumler. 2003. “Levels of Measurement and Analysis Issues in Organizational Citizenship Behaviour Research.” *Journal of Occupational and Organizational Psychology* 76(3): 283–301.

Stevens, J. R., and M. D. Hauser. 2004. “Why Be Nice? Psychological Constraints on the Evolution of Cooperation.” *Trends in Cognitive Sciences* 8(2): 60–65.

Stuart, T. E. 2000. “Interorganizational Alliances and the Performance of Firms: A Study of Growth and Innovation.” *Strategic Management Journal* 21(8): 791–811.

Trivers, R. L. 1971. “The Evolution of Reciprocal Altruism.” *The Quarterly Review of Biology* 46(1): 35.

Unger, L. S. 1991. “Altruism as a Motivation to Volunteer.” *Journal of Economic Psychology* 12(1): 71–100.

Wincent, J., S. Anokhin, and D. Örtqvist. 2010. “Does Network Board Capital Matter? A Study of Innovative Performance in Strategic SME Networks.” *Journal of Business Research* 63(3): 265–275.

Wincent, J., S. Anokhin, D. Örtqvist, and E. Autio. 2010a. “Quality Meets Structure: Generalized Reciprocity and Firm-Level Advantage in Strategic Networks.” *Journal of Management Studies* 47(4): 597–624.

Wincent, J., D. Örtqvist, J. Eriksson, and E. Autio. 2010b. “The More the Merrier? The Effect of Group Size on Effectiveness in SME Funding Campaigns.” *Strategic Organization* 8(1): 43–68.

Wright, J. C., M. Giammarino, and H. W. Parad. 1986. “Social Status in Small Groups: Individual-Group Similarity and the Social “Misfit”.” *Journal of Personality and Social Psychology* 50(3): 523–536.

Yamagishi, T., and K. S. Cook. 1993. “Generalized Exchange and Social Dilemmas.” *Social Psychology Quarterly* 56(4): 235–248.