

**RECOGNIZING SOCIAL CAPITAL IN SOCIAL NETWORKS:
EXPERIMENTAL RESULTS
(14489)**

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ABSTRACT

Social capital is an asset that has been positively linked to people's positions in social networks (Burt, 1992). Yet, what allows some people to shift into these positions has received far less attention. We sought to fill this hole in the literature by offering socio-cognitive explanations for why and how some come to occupy critical positions while others do not. We proposed and found that self-construal—or how people view themselves in relation to their social world—affects people's ability to learn a novel social network. The greater people's cognitive ability, the faster they learned the network. However, self-construal attenuated the effect; cognitive ability mattered for those who had a more independent (i.e., less relational) self-construal, but had no effect on learning for those who were more relational in their self-construal. Given more time, those higher in relational self-construal (RSC) developed comparatively more accurate perceptions of the status and power relations in the network.

INTRODUCTION

With few exceptions, the growing literature on social capital reveals that benefits flow to those who have it. This finding begs a critical question, however: how do some people come to have more social capital than others? Structural theories argue that the potential to develop and exploit social capital is related to a person's position in a social network. For instance, according to structural holes theory (Burt, 1992), actors whose social networks are sparser—that is, characterized by more holes—are better positioned to play the kind of broker role that should pay off with access to more and better information and resources, as well as greater opportunity to benefit from them. As a result, people who bridge the space between two otherwise unconnected groups stand to enhance their social capital.

Questions of why and how some actors span the structural hole, moving from a disadvantaged position to one that is rich in opportunity while others stay put, remain unaddressed. We argue that answers to these questions are likely to have their roots in socio-cognitive explanations of individual behavior. Social cognition centers on how people understand themselves and interpret their social worlds, making it a particularly useful theoretical basis for predicting whether people recognize opportunities to enhance their social capital, and how they navigate the social world to take advantage of these opportunities. At the

heart of our study is how an actor's self-construal—that is, how the actor sees himself/herself in relation to others—affect his/her ability to learn and understand social networks.

SEEING AND SEIZING OPPORTUNITIES TO BUILD SOCIAL CAPITAL

Social capital has been defined as goodwill, or the sympathy, trust and forgiveness that exist between friends and acquaintances (Adler & Kwon, 2002). The benefits of social capital are well documented. At the level of the actor, studies show that those greater social capital find better job opportunities (Granovetter [1974], 1995; Fernandez & Weinberg, 1997), negotiate higher salaries (Seidel, Polzer, & Stewart, 2000), and take home fatter paychecks (Meyerson, 1994). However, we know comparatively little about the conditions that enable some actors to spot and then exploit opportunities to enhance their social capital.

Efforts are afoot to explore the micro-foundations of social capital. Much of this work has sought to link individual traits with individuals' perceptions of networks or their positions in networks. For instance, self-monitoring also has been linked to network position, with higher self-monitors occupying more central positions in social networks (Mehra, Kilduff, & Brass, 2001). Arguing that entrepreneurs have a special knack for seeing and seizing opportunities, Burt, Jannotta, and Mahoney (1998) measured people's network entrepreneurship personality, and found that those with higher scores were better positioned to span structural holes.

While these data are suggestive, they are correlational, and cannot support causal claims. However, some experimental work does exist. People tend to see relationships between actors in a network, even when such relationships did not exist (Freeman, 1992), which implies that people are likely to miss opportunities for bridging holes, and thus, building capital. Janicik and Larrick (2005) showed that individuals' experiences with structural holes gave some the edge in accurately perceiving—and thus recognizing the opportunities within—social networks. We extend this work by hypothesizing that the way in which people understand and relate to their social worlds provides a way of exploring the cognitive mechanisms that underlie the acquisition of social capital and the evolution of social networks.

Hypotheses

Detecting patterns of relationships among people might not be very different from detecting patterns in other kinds of data. If this is the case, a human capital argument could be made that individuals with better cognitive skills and abilities will have the advantage in accurately perceiving whether and how people are connected in social networks.

Hypothesis 1. Actors with greater cognitive ability will learn the patterns of relationships that comprise a social network more quickly than those with lesser cognitive ability.

Alternatively, one could argue that social networks differ fundamentally from other kinds of patterns because they concern something important to people—namely, other people. Thus, people should treat patterns of relationships differently than other patterns, perhaps learning them at different rates or developing more detailed understandings of them. Indeed, experimental results show that people take *longer* to learn social networks than non-social (traffic) networks (Janicik & Larrick, 2005). We posit that the degree to which people attend to their social environments will affect their ability to correctly understand their environment, which has implications for their ability to generate social capital.

Looking to explain cultural variation in cognitions, emotions, and behaviors, Markus and Kitayama (1991) proposed that there was systematic variation in how individuals construe themselves and others, and the relationship between the self and others. In Western cultures people are more likely to view the self as distinct from others. An important goal for the individual is to become an independent person, a conception of the self called *independent self-construal*. In non-Western cultures, however, the emphasis is on how the individual is connected to others, with the goal of seeing oneself as embedded in social relationships. Thus, the task for the individual is to become connected to others, and maintain harmonious relationships. This view of the self was described as *interdependent self-construal*. Other work has documented the extent to which people are motivated to develop and maintain close relationships, and refers to it as *relational self-construal* (Cross and Morris, 2003).

Ensuring harmonious social interactions requires a full understanding of others' interests and preferences. People who have greater relational self-construal are vigilant about monitoring their social environment, attending to others' needs, interests, and goals. As Markus and Kitayama argued, being aware of others and sensitive to their needs and interests should encourage those with an interdependent self-construal to develop a "dense and richly elaborated store of information about others or of the self in relation" (p. 231, Markus & Kitayama, 1991).

Developing detailed cognitions about patterns of social relationships is a different, more cognitively demanding and complex task than learning how pairs of people are linked (or not). An actor's self-construal will influence how a social relations learning task is perceived and executed. Participants in this study will engage in a flashcard learning task (DeSoto, 1960) that requires them to learn the dyadic relationships between people in a social network. Viewed one way, the task can be seen as a rather straightforward pattern recognition task. Viewed another way, however, the task is more complicated, allowing learners to develop insights into how the parties fit together in the broader social network. Whether learners understand the task in simple terms or as a complex social network learning task should depend on their self-construal.

A learner's propensity to interpret the task from one focused on the pattern of dyadic relationships to one centered on learning the broader pattern of interconnected actors in a social network should vary as a function of how the learner understands and relates to his/her social environment. Understanding the task as one that requires the learner to try to piece together bits of social data to reconstruct the broader pattern of social relationships in a social network will be relatively complicated. Thus, we expect participants who are higher in relational self-construal (RSC) to take longer to learn the social network than those who are lower in RSC.

Hypothesis 2. Individuals who are higher in RSC will learn the pattern of relations in a social network more slowly than those who are lower in RSC.

We have argued that for learners who are lower in RSC the task is one of simple pattern recognition. If this is the case, then cognitive ability should play an especially strong part in individuals' ability to learn the dyadic relationships quickly: the smarter the learner, the more quickly he or she will learn the pairwise relations. For those with higher RSC, the task is not one of simple memorization but rather it allows them to develop quite detailed and elaborate understandings of the people and relationships that form the broader network. Creating this knowledge should involve not only an effort to understand who is related to whom, but also who has greater power, who has least status, and so on. Cognitive ability might play a role here; but because this is not a purely intellectual task, the link between cognitive ability and task performance should not be as strong as it is for those with lower RSC. Thus, we propose an

interaction between self-construal and cognitive ability wherein the effect of cognitive ability should be stronger among those lower in RSC.

Hypothesis 3. Cognitive ability will have a stronger effect on social network learning for individuals lower in RSC than for those higher in RSC.

We would expect people's understandings of relationships to vary systematically as a function of self-construal. Above we argued that those who are higher in RSC are engaged in a more cognitively complex task that would take them longer to complete than those who are lower in RSC. This suggests that the longer it takes those who are higher in RSC to complete the task, the more accurate their perceptions of who has greater status and power in the social network. Alternatively, for individuals lower in RSC, those who take longer to complete the task are struggling to learn the simple dyadic relations, so greater time spent on task is unlikely to translate into more accurate perceptions of the nature of relationships in the social network.

Hypothesis 4. Among individuals lower in RSC, accurate perceptions of status and power relationships among the network nodes will be negatively related to time on task, whereas the relation will be positive for those higher in RSC.

METHOD

Ninety eight undergraduate students participated in this study. Fifty participants (51%) were female. A week before the experiment, we assessed their self-construal. Participants engaged in a network learning task to test how quickly and accurately people learn social relations (for similar see DeSoto, 1960; Janicik & Larrick, 2005). They learned who knows what others know in a hypothetical social network involving five parties: Bill, John, Dave, Greg, and Rick. Each participant sat at a computer terminal, and a program displayed 20 randomly ordered "flashcards," representing all possible relations among the five individuals. Each card contained two names. Participants had to learn whether the first person on the card knows what the second person knows. After participants guessed, the computer displayed the correct answer, and then showed the next card. After all cards had been read and answers revealed, the cards were reordered and the process began again and was repeated until participants correctly identified all relations twice in a row. Each time through the "deck" counted as one trial.

Dependent variables included the number of trials needed to learn the relationships, post-task questions regarding perceptions of power, status, knowledge, and leadership, as well as open-ended questions about how they would advise others to complete the task. We used Cross' (2000) Relational-Interdependent Self-Construal Scale and Singelis' (1994) independence scale ($\alpha = .79$), taking a median split to divide the sample into low relational self-construal (RSC) ($M = 4.40$, $sd = .52$), and high RSC ($M = 5.68$, $sd = .39$). Following convention, we used participants' reported SAT scores as a proxy for cognitive ability.

RESULTS AND DISCUSSION

According to Hypothesis 1, the greater an individual's cognitive ability, the more quickly she or he should learn the structure of the social network. Indeed, as the cognitive ability of the sample increased, participants took fewer trials to learn the pattern of relationships that formed the structure of the social network ($\beta = -.29$, $t = -2.93$, $p < .01$).

Although we hypothesized that individuals with higher RSC should take longer to learn the structure of a social network than those lower in RSC (H2), results failed to support this

hypothesis. There was no difference in the number of average trials for actors lower in RSC ($M = 15.96$, $sd = 10.06$) and higher in RSC ($M = 13.86$, $sd = 7.73$), $F(1, 97) = 1.35$, *ns*.

We predicted an interaction between cognitive ability and relational self-construal on how quickly participants would learn the structure of the social network (H3). For participants with lower RSC, we expected a significant negative relation between cognitive ability and number of trials—with those with greater cognitive ability learning the relationships much more quickly than those with lesser ability. In contrast, we expected that the link between cognitive ability and time to task completion would be weaker for those higher in RSC. For those higher in RSC, the link between cognitive ability and trials would be weaker. Among those with lower RSC, individuals with greater cognitive ability learned the structure of the social network in fewer trials than those with lesser ability ($r = -.35$, $n = 48$, $p < .05$). For those higher in RSC, cognitive ability was not related to how quickly this group learned the structure of the social network ($r = -.20$, $n = 50$, *ns*). For cognitive ability to have an impact for one group, but not the other suggests that the two groups are treating the task differently, supporting our proposition that self-construal influences how people view and learn about social networks.

Responses to open-ended questions support our claims. Participants with lower RSC appeared to treat this as a purely cognitive task, suggesting that future participants: “look for patterns and then mnemonic devices to remember them” and “don't try to memorize names, but maybe initials or acronyms.” In contrast, higher RSC participants recommended that others “think of the five as people you know instead of just five random names.” They also offered their own strategies: “Instead of the names given here one should try to relate these names to people in their life according to what they do and do not about those people,” and “visualize the hierarchy as you learn about the relationships.” These responses suggest that self-construal affects how people come to understand social networks.

If our conjecture is correct that self-construal affects the way people learn and understand social network relationships, we would expect participants who are higher in RSC to have a deeper, more accurate understanding of the nature of relationships across all the nodes. We examined the accuracy of participants' perceptions of status among the five nodes in the social network. For those in the higher RSC condition, the link between number of trials and accurate perceptions of the broader network was positive and significant: as time passed, they were more accurate about who had more power in the network ($r = .24$, $n = 50$, $p < .05$, one-tailed). The relation between time and accuracy of status perceptions was positive, but just marginally significant ($r = .22$, $n = 50$, $p = .06$, one-tailed). As time passes, those with higher RSC developed greater insight into the social hierarchy among the network players.

Recall that among people lower in RSC, those with greater cognitive ability learned the network in fewer trials. As the number of trials it takes to learn the network increases, the accuracy of individuals' perceptions of the power and status dynamics across the social structure should diminish. Indeed, for questions of status, the link between number of trials and accuracy of status perceptions was negative and marginally significant ($r = -.19$, $n = 48$, $p = .08$, one-tailed). That is, the longer it takes participants lower in RSC to learn the network, the less accurate their perceptions of who has status in broader social network in which the actors are embedded. For perceptions of power, the link between trials and perceptual accuracy also was negative and marginally significant ($r = -.19$, $n = 48$, $p = .08$, one-tailed). The results suggest that as the number of trials increases among individuals lower in relational self-construal, their understanding of the power and status dynamics of the group becomes murkier. These findings

support our premise that self-construal plays a role in shaping how people come to understand social networks, a first step in building the social capital that brings benefit to the individual.

Social capital is developed (or not) by people through their social exchanges. Enhancing one's capital, therefore, should hinge on people's abilities to spot opportunities and then navigate their social environments to exploit them. Yet, the role of social cognition in network evolution has yet to be fully explored. Our findings show that how people view and relate to their social worlds—self-construal—plays a role in their ability to learn novel networks. This work offers a promising starting point for other scholars interested in how people shape their social networks.

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