Network Structure, Collaborative Context, and Individual Creativity

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NETWORK STRUCTURE, COLLABORATIVE CONTEXT, AND INDIVIDUAL CREATIVITY

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ABSTRACT

The causal chain connecting network structures and individual outcomes often assumes that different network structures embody specific individual behaviors. We challenge the assumption that dense structures imply a collaborative attitude on the part of network actors. Knowledge acquisition and individual creativity are more likely when a network position has a good fit with the organizational context.

INTRODUCTION

Individual knowledge sharing and creative behavior contribute to the generation of novel, useful, and actionable solutions and processes that are crucially important for organizational innovation, survival, and success (Amabile 1996, Ford 1996, Woodman et al. 1993). Since employee creativity is a key component of growth and competitiveness for many organizations (Schumpeter 1942, Tushman and Moore 1988), scholars are intensely interested in determining where it originates. A long line of research across multiple disciplines has therefore attempted to identify factors that favor or hinder the emergence of individual creativity in organizations (Amabile 1996, George and Zhou 2001).

Within this broad field of study, a prominent perspective suggests that network ties stimulate innovative behaviors by facilitating access to others’ ideas and knowledge (Ahuja 2000, Baum et al. 2000, Hagedoorn 2002, Stuart 2000, Borgatti and Halgin 2011). In this framework, network ties are a critical locus for creativity (Ibarra 1993, Powell and Brantley 1992, Powell et al. 1996, Shan et al. 1994) and, by extension, the structure of ties in a network can enhance knowledge sharing and creativity (Fleming et al. 2007, Obstfeld 2005). One particularly well-established debate in this area explores which general network structure is most likely to support individual creativity: socially bonded networks with actors embedded in dense networks of mutually reinforcing ties; or open, brokered networks where actors who bridge distant, unconnected contacts can identify and assemble unique sets of useful knowledge (Fleming et al. 2007, Obstfeld 2005). On the one hand, dense, socially bonded networks should strengthen trust, mutual monitoring, and interpersonal collaboration among network participants (Coleman 1988), promoting the knowledge sharing that fosters individual creativity (Obstfeld 2005, Reagans and McEvily 2003, Uzzi and Spiro 2005). On the other hand, open, brokered networks let individuals span structural holes between contacts who would otherwise be disconnected. This position gives
brokers the potential to access and control a larger quantity and quality of diverse knowledge—a fundamental driver of creative idea generation (Amabile 1996, Burt 2004).

The tension between these apparently opposing views has recently been addressed by arguing that the distinct advantages of bonded and brokered networks might be optimal at different stages in the creative process (Kijkuit and Van Den Ende 2007). Brokers may be better off during the initial phase of creative idea generation, as they are more likely to be exposed to diverse knowledge (Burt 2004), while individuals in densely bonded networks might be better at championing new ideas and integrating them into the organization (Flap and Wölker 2001). Nevertheless, the larger question of which network structure is more conducive to individual-level creativity remains unanswered.

We address this problem by challenging the commonly held assumption that specific network structures imply specific levels of collaboration. We theorize that both bonded and brokered networks can emerge in organization contexts that are collaborative or non-collaborative. However, the different network structures may have a poor fit with the larger organizational context, depending on how collaborative that context is. A poor fit will create significant variance in a focal employee’s ability to obtain knowledge conducive to individual creativity. We test this argument using uniquely detailed data on the collaborative context, knowledge acquisition, and creative performance of a Danish chemical company.

We model interpersonal collaboration as a contextual factor that can be encouraged or inhibited by the organization. Thus, an organization with a collaborative spirit might influence whether bonded or brokered networks are more likely to enhance knowledge acquisition and employee creativity. This perspective offers three main contributions to the extant literature. First, it allows us to tease out an important condition under which bonded and brokered network structures will be conducive to knowledge acquisition and individual creativity. Different from research that focuses on the contingent effects of individual experience (Fleming et al. 2007) and cognition (Carnabuci and Diószegi 2015), or on contextual heterogeneity (Mors 2005) and collectivism (Xiao and Tsui 2007), our perspective pinpoints a collaborative work environment as a key condition for networks to generate creativity. In so doing we also contribute to the research that proffers a contingent view of the value generated by network structures inside the organization (Burt 1997, Carnabuci and Diószegi 2015).

Second, we challenge the commonly held tendency to use structural network configurations to make assumptions about the collaborative nature of relationships within organizations. In particular, we challenge both theoretically and empirically the idea that bonded (brokered) social structures should be assumed to foster (hinder) collaborative behaviors among embedded actors.

Third, by directly measuring not only the creative performance and the network in which organizational members are embedded, as well as the knowledge flows (both given and received) in a network and the level of collaboration in the work context generally, we tease out the precise mechanisms through which individual network structures lead to knowledge acquisition and employee creativity. This insight contributes to the stream of literature that highlights the importance of directly capturing knowledge mechanisms that have been routinely postulated but seldom measured directly in network research (Reagans and McEvily 2003, Rodan and Galunic 2004).

**HYPOTHESES**
Hypothesis 1. The level of collaboration within the ego network moderates (negatively) the relationship between ego-brokerage and her knowledge acquisition.

Hypothesis 2. The level of collaboration within the ego network moderates (positively) the relationship between ego-density and her knowledge acquisition.

Hypothesis 3. More knowledge acquisition leads to higher levels of individual creativity.

Taken together, our three hypotheses allow us to explore the entire causal chain that links bonded and brokered network structures to high levels of individual creativity. Specifically, we propose that individuals embedded in densely bonded networks acquire higher levels of knowledge when those networks are realized in highly collaborative work environments (Hypothesis 1); this in turn leads them to higher creativity (Hypothesis 3). Conversely, individuals that broker otherwise disconnected alters will acquire a higher level of useful knowledge if they are embedded in non-collaborative contexts (Hypothesis 2). Also in this case, higher knowledge acquisition will lead to higher individual creativity (Hypothesis 3). The advantage of this model is that it simultaneously captures the contextual variable of collaboration and the level of knowledge acquired, factors that have been black-boxed in previous research linking bonded and/or brokered networks to individual creativity. The entire chain, illustrated in Figure 1, includes two equations: One with knowledge acquisition as the dependent variable, and one with creativity as the dependent variable.

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Figures 1, 2 and 3 about here
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REFERENCES AVAILABLE FROM THE AUTHORS
FIGURE 1
Theoretical model
FIGURE 2
How brokerage and collaborative context affect knowledge acquisition

FIGURE 3
How density and collaborative context affect knowledge acquisition*
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