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UNDERSTANDING BEHAVIORAL TRADEOFFS IN NETWORKING FOR INFORMATION: AN INTERACTIVE EXPERIMENT WITH SOCIOMETRIC BADGES

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INTRODUCTION

Networking has become integral to professional life, and plays an important role in the lives of entrepreneurs, inventors, managers and other creative professionals, for whom access to information and advice is critical to generating new ideas and solving problems (Singh, Hansen, and Podolny, 2010; Hallen and Eisenhardt, 2012). The emergent literature sheds light on a range of dichotomies that characterize different approaches to networking (e.g. Vissa, 2012; Bensaou, Galunic, and Jonczyk-Sédès, 2014; Kuwabara, Hildebrand, and Zou, 2016), two of which are especially relevant to information search: deliberate versus spontaneous, (Kilduff and Tsai, 2003; Casciaro, Gino, and Kouchaki, 2014), and selfish versus altruistically motivated behavior. Since both ends of each continuum come with distinct costs and benefits, these dichotomies present themselves as tradeoffs, and extant literature lacks guidance on how individuals' can best resolve them. This shortcoming is especially salient with respect to networking events, where both deliberate and spontaneous approaches may be beneficial, and where concurrent search forces participants to balance their own interests with helping others. In this study, we investigate how individuals may best manage these tradeoffs, as well as the degree to which they do so in practice, during an interactive networking "game" involving random assignment to treatment conditions, as well as the use of multiple data sources, including sociometric badge data.

THEORY

Most work on social networks has taken up a "structuralist" perspective that emphasizes the role of structural forces at the expense of individual intent to explain networking dynamics (Emirbayer and Goodwin, 1994), and this approach has extended to the study of networking events (Ingram and Morris, 2007; Singh, Hansen, and Podolny, 2010). Conversely, recent literature has begun to emphasize individual agency (Kilduff and Krackhardt, 2008), and to explore different

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networking "strategies" (eg., Vissa, 2012; Bensaou, Galunic, and Jonczyk-Sédès, 2014) and their moral repercussions (Casciaro, Gino, and Kouchaki, 2014). Yet we lack an understanding of how individuals may maneuver between deliberate and selfish versus spontaneous and altruistic behaviors, that is, between maintaining versus relinquishing control over search. The tradeoffs present complex dilemmas. Deliberate actions work by matching other participants' known attributes (i.e. expertise) to those of one's search target – by building on one's network knowledge, it becomes possible to locate a better-than-random starting point (Adamic and Adar, 2005). Conversely, spontaneous actions may be superior when lacking usable network knowledge, as such "random" interactions have a greater chance of cutting across network cliques and revealing novel information (Granovetter, 1973; Uzzi and Spiro, 2005). Relatedly, selfishly motivated search may maximize effectiveness by cutting out distractions, yet may also violate norms of reciprocity (Brass et al., 2004), making participants feel exploitative and "dirty" (Casciaro, Gino, and Kouchaki, 2014). For this reason, the mechanism behind altruistically motivated networking may seem more appealing: by first helping others, individuals build goodwill in others, and may then rely on the social capital thus accumulated to ask for favors that advance their own search agendas (Coleman, 1988; Gintis et al., 2003).

METHOD

To shed light on the mechanisms that enable networking individuals to deal with the tradeoffs mentioned above, we ran an experiment in which the participants ($N^{individuals} = 69$; $N^{interactions} = 571$)—researchers in a large multinational corporation—played an information search game. Prior to the game, we collected data on the network of relationships among participants (who knows whom, and how well they know each other's research), which allowed us to allocate search targets such that participants did not already know the person they were searching for. In addition, we included a battery of personality and cognition measures, all of which might conceivably predict subsequent networking behavior.

The game took place in a controlled, event-style setting which allowed us to monitor participants' behavior using sociometric badges (Kim et al., 2012; Lederman et al., 2018). The goal was to locate a certain other participant—their search target—who had the requisite expertise to answer a research-related question specifically assigned to them. Importantly, participants could only talk in pairs, allowing us to reliably track information flow. We incentivized participants by promising the winner – the one who succeeded most quickly – a GoPro camera. To emulate the first tradeoff, participants were randomly assigned to three conditions (Assisted Planning; Autonomous Planning; No Planning) that manipulated the quality and salience of their network knowledge, and thus, influenced their proclivity to engage in deliberate versus spontaneous networking actions. Specifically, two groups were instructed to plan in advance who to consult during the networking, thereby increasing the *salience* of their network knowledge compared to the third group which involved no planning. Participants in one of the two planning groups (Assisted Planning) were given a delegate list which increased the *quality* of their network knowledge compared to those in the other groups. To emulate the second tradeoff—i.e. selfish vs. altruistic behavior—all participants searched simultaneously for information whilst holding information other subjects might be looking for. This aspect of the experimental design created a tension that forced participants to choose between prioritizing their own search and maintaining control over initiation of interactions, versus helping others and letting them initiate conversations.

We recorded the sequence of interactions in three ways. First, participants were provided

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with interaction tracking forms allowing them to record, chronologically and for each interaction, the IDs of all participants they talked to, and the answer to the icebreaker question. We added this latter element to make interactions more costly, thereby making decisions more important. They could also indicate whether participants referred them to someone else, and whether they asked their assigned question. Second, all interactions were video recorded from multiple angles. All the participants wore brightly colored vests displaying their ID numbers front and back. Third and most importantly, we used sociometric badges to record data about participants' conversation partners (Kim et al., 2012).

Our dependent variable was *interaction usefulness.* Interactions could be seen as useful (i.e. playing a role in subsequent success) in one of two ways: directly, by revealing that the current interaction partner is in fact one's target, and indirectly, by providing referrals which, in one or more steps, led to the target. To construct our independent variables, we created a taxonomy of *networking behaviors* (at the level of the interaction), using all our available data sources. This allowed us to classify all interactions into one of seven types (see Figure 1), which may then be further grouped according to intent (deliberate vs. spontaneous) and initiation (ego-initiated, i.e. selfishly motivated vs. alter-initiated, i.e. altruistically motivated). We considered network knowledge *quality* to be at a high level if a participant could act on objectively valuable knowledge, i.e. if their target was part of their prior plan. Conversely, if the plan lacked the target, or if there was no plan at all, we considered knowledge quality to be at a low level. With respect to knowledge *salience*, having a plan (irrespective of its quality) was taken as an indicator of salience, and not having one meant low or no salience. Finally, we collected data on additional control variables, including sociability (Cheek and Buss, 1981), self-efficacy (Chen, Gully, and Eden, 2001) and self-monitoring (Snyder, 1974).

RESULTS

Results indicate that participants in the Assisted Planning treatment condition were more likely to succeed in reaching their target (85.7%) than those in the other two groups (67.4%). Access to delegate lists was thus an important source of network knowledge. However, prior interactions were another such source, as those with higher network centrality were more likely to include their target on their plan ($r = 0.30$, $p = 0.06$).

Our study revealed that there was substantial variation both across and within condition groups as to when individuals prioritized their own search and exercised control over the initiation of interactions. First, we found that participants with high-quality network knowledge (derived from delegate lists or prior interactions) were more effective at navigating their social environment and locating their target. They appeared to appreciate the superior quality of their network knowledge, and acted in line with their best interests, prioritizing deliberate over spontaneous actions. Second, we found that individuals lacking high-quality network knowledge on which to base any deliberate networking actions were better off by first helping others, and then using the newly gained goodwill to ask for referrals for their own search. This two-step approach based on spontaneity in combination with altruism proved more effective for yielding referrals (75.6%) than "selfishly" initiated spontaneous network actions (57%) – or any other type of interaction, for that matter (28.6%). This is because participants appeared more willing to provide referrals to those who had helped them previously. Surprisingly, while those with salient but low-quality network knowledge recognized when they should not act on that knowledge through deliberate networking actions, they nonetheless preferred to maintain control over initiating interactions, favoring

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spontaneous exchanges initiated by themselves over those where they first helped others.

We therefore identified two distinct routes to success when searching one's network for information, and the choice of the optimal route is contingent on the quality of one's network knowledge. If one has the luxury of searching based on high-quality knowledge (gained either from prior information, or through networking), then highly agentic, ego-initiated (i.e. selfish) and deliberate search is preferable. However, lacking such knowledge, one will do well to relinquish control entirely and invest time in helping others, for this indirect method of search will more likely lead to valuable referrals. Taken together, these two routes can be conceived of as parts of an oscillating process of networking behavior (see Figure 2), whereby networking individuals should alternate between the two extremes depending on their current knowledge of others, taking care to avoid the intermediate levels of agency, which provide neither the advantages of attribute-based search, nor those of search based on altruism and reciprocity.

DISCUSSION

In demonstrating how individuals resolve—or should resolve—behavioral tradeoffs in networking, we contribute to a growing body of research that analyzes networks from a behavioral perspective (Hallen and Eisenhardt, 2012; Vissa, 2012; Bensaou, Galunic, and Jonczyk-Sédès, 2014; Casciaro, Gino, and Kouchaki, 2014; Burt and Merluzzi, 2016). First, we develop a detailed taxonomy of networking behaviors (see Figure 1) which combines the tradeoffs of deliberation versus spontaneity and self-interest versus altruism within a single framework. This taxonomy is based on observations with sociometric badges triangulated with other data. It reveals that deliberate-selfish behaviors and spontaneous-altruistic behaviors are more effective than spontaneous-selfish behaviors. Second, our findings inform the ongoing debate on the relative role of individual agency versus structural factors in determining patterns of interaction (Bandura, 1989; Emirbayer and Goodwin, 1994). While foundational studies in sociology emphasize the role of structural factors (e.g. Granovetter, 1985; Coleman, 1988) and more recent work pays more attention to agency (e.g. Kilduff and Krackhardt, 2008; Vissa, 2012), our findings suggest that networking emerges from their dynamic interplay. Rather than engaging in a "balancing act" whereby individuals seek the middle ground between opposing behaviors, individuals resolve these tradeoffs by oscillating between the extremes. Finally and relatedly, we highlight that networking behavior is governed concurrently by the deliberate and "selfish" pursuit of one's own agenda, and by the "altruistic" accumulation of goodwill, helping oneself by helping others (Coleman, 1988; Portes, 1998). This is perhaps good news for the "purists" (Bensaou, Galunic, and Jonczyk-Sédès, 2014) and those that see networking as inherently "dirty" (Casciaro, Gino, and Kouchaki, 2014) since our results show that to be effective networking need not be selfish and instrumental.

The artificiality of our experimental setting entails certain limitations, which future research may seek to address. For example, as ours was a "closed system", purely altruistic (help only; H) actions were of little value, since any social capital thus accumulated would expire at the end of the game. In real life, however, favors are less easily forgotten, and social capital does not decay so quickly (Burt, 2000; Kleinbaum, 2017). Pure altruism may thus pay off in a longer term. One way that future scholars could investigate this possibility would be to repeat a similar game, with the same set of participants and relatively little time between subsequent games. Such a setup would provide insight into the potential effectiveness of long-term altruistic strategies. Another example relates to group dynamics. To accurately track information flow, we restricted group size

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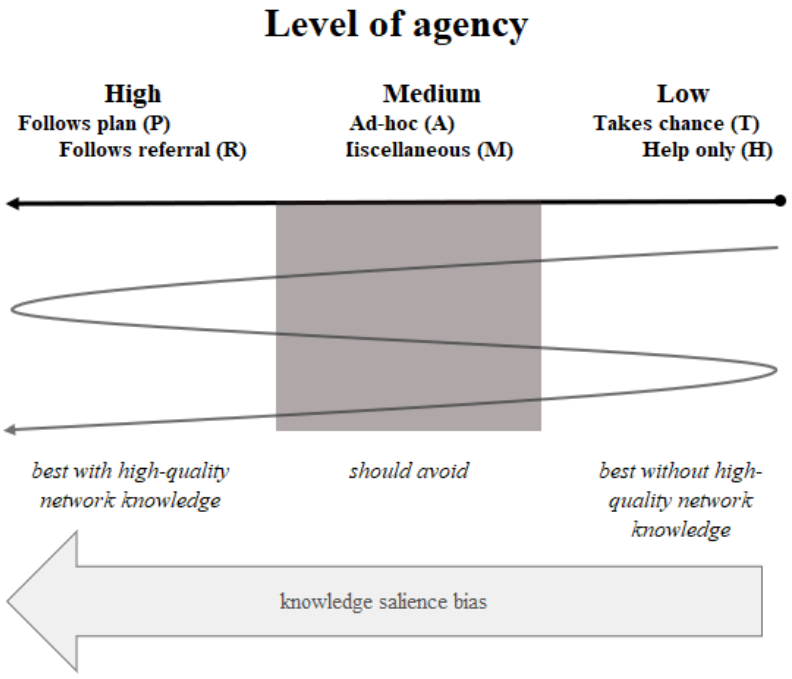
to two persons. However, in a natural networking event, participants would likely converse in small groups of three or more (Ingram and Morris, 2007). This implies that the strategic decisions underlying networking behavior would be more complex than observed in our setting, and may extend to "micro-strategies" akin to Obstfeld's (2005) tertius gaudens and tertius iungens, or even to conscious pacing of interactions.

Figure 1: Taxonomy of interactions in the experiment

Code	Label	Intent	Initiation	Description
P	Follows plan	Deliberate	Ego	Ego approaches a person that is on the plan they created at the start of the experiment.
R	Follows referral	Deliberate	Ego	Ego approaches a person they have been referred to previously during the game.
A	Adhoc interaction	Spontaneous	Ego	Ego approaches a person spontaneously, because they happen to be nearby and/or are available.
M	Miscellaneous interaction	Spontaneous	Unclear	Ego and alter start an interaction because they are nearby and both are available.
T	Takes chance	Spontaneous	Alter	Alter initiates an interaction with ego and ego takes a chance and also asks their assigned question.
H	Help only	Spontaneous	Alter	Alter initiates an interaction with ego and decides to help alter but does not ask their assigned question.
O	Other interaction	N/A	Unclear	Neither ego, nor alter appear to initiate the conversation and neither ask their question.

Figure 2: Oscillating model of effective networking behavior



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