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Voice as a Signal of Human and Social Capital in Team Assembly Decisions

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Team membership in today's open talent economy is more fluid and interchangeable than ever before. In light of these dynamics, we consider how team members' signaling of human and social capital, in the form of challenging or supportive voice, informs our understanding of how individuals across an organizational network self-assemble into temporary work teams. We test our hypotheses in two separate multiwave studies and find support for our hypotheses above and beyond the effects of homophily. In Study 1, we find support for a human capital pathway in which challenging voice in a team fosters perceptions of quality work that enhance one's personal reputation in the broader network. Personal reputation, in turn, predicts team assembly decisions. In Study 2, we consider a social capital pathway alongside the human capital pathway. We find that supportive voice in a team fosters friendship that enhances the extent to which one is trusted in the broader network, and trust subsequently influences team assembly decisions. Potential team members appear to prioritize the social capital signaled by supportive voice more so than the human capital signaled by challenging voice, although those who possess both human and social capital are also highly sought during team formation. We discuss the implications of these findings for the literatures on voice and team assembly.

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The fluid assembly of teams is critical in an open talent economy, a trend in organizations in which projects are sourced from a variety of talent pools and individuals move freely from project to project across team boundaries (Liakopoulos, Barry, & Schwartz, 2013). In concert with this trend, team membership is increasingly fluid and frequently reconfigured to meet complex and dynamic organizational needs (Tannenbaum, Mathieu, Salas, & Cohen, 2012). Thus, work activities occur through the rapid configuration and reconfiguration of individuals via autonomous team assembly. In fact, many organizations actively encourage team assembly episodes, in which individuals voice ideas and self-assemble into temporary teams with other organizational members (Bock, 2015). The result of such fluid interactions is that "teamwork on the fly" has become a familiar practice in organizations (Edmondson, 2012), with critical implications for one's long-term career success (e.g., Seibert, Kraimer, & Liden, 2001).

Despite the prevalence of temporary work teams and their importance to individuals and organizations, prior research has yet to uncover the behaviors that explain why some individuals are more sought after than others when assembling into teams. Although scholars have examined individual attributes that influence team assembly (e.g., tenure, gender, and past collaboration; Contractor, 2013; Guimerà, Uzzi, Spiro, & Nunes Amaral, 2005; Lungeanu, Huang, & Contractor, 2014), behaviors may provide a more complete signal in evaluating potential team members, because behaviors demonstrate one's capabilities and value to a team and are a more proximal indicator of team performance (DeRue, Nahrgang, Wellman, & Humphrey, 2011). To this end, a growing body of work on short-duration teams points to the importance of voice, as speaking up is a readily observable behavior that conveys information vital to team success (Edmondson, 2012; Sherf, Sinha, Tangirala, & Awasty, 2018). Indeed, voice, or communication about work-related issues, is not only essential to team effectiveness (Detert, Burris, Harrison, & Martin, 2013; Li, Liao, Tangirala, & Firth, 2017) but also a key behavior that can signal to others an individual's potential contributions to a future team. Accordingly, voice is critical to team assembly because it generates judgments about an individual (Whiting, Maynes, Podsakoff, & Podsakoff, 2012), provides a benchmark to gauge one's ideas (Pauksztat, Steglich, & Wittek, 2011), signals one's knowledge and social value within a team (McClean, Martin, Emich, & Woodruff, 2018; Weiss & Morrison, 2019), demonstrates one's participation in team activities (Chamberlin, Newton, & LePine, 2018), and transcends team boundaries (Detert et al., 2013). Thus, examining the extent to which voice signals whom others select as a potential team member would inform team assembly decisions since "nowhere is the need for voice more important than in work groups" (LePine & Van Dyne, 1998: 853).

Researchers have identified various types of voice that might signal distinct contributions individuals could make to a temporary team. *Challenging voice* is improvement-oriented communication that generates new ideas, alters the status quo, and enhances efficiency in teams (Burris, 2012; LePine & Van Dyne, 1998). Although challenging voice has potential downsides, such as perceived criticism, conflict, and threat (Burris, 2012; Morrison, 2011; Seibert, Kraimer, & Crant, 2001), prior research generally focuses on its constructive attributes that enhance team effectiveness (Frazier & Bowler, 2015; MacKenzie, Podsakoff, &

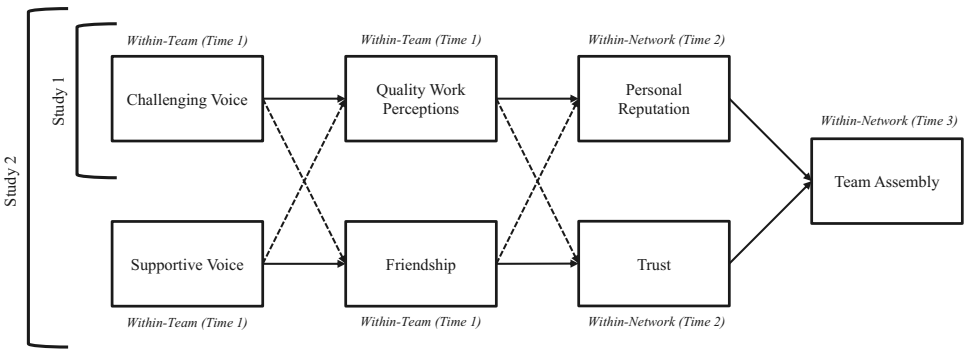
Podsakoff, 2011). By suggesting new and efficient ways of operating, challenging voice may signal one's *human capital*, or task-relevant skills and capabilities to complete work effectively (Coleman, 1988; Subramaniam & Youndt, 2005). Indeed, challenging voice is a way for individuals to share innovative and useful ideas that foster task achievement (Zhou & George, 2001) and demonstrate their competence and skill (Weiss & Morrison, 2019). Future team members, therefore, may find challenging voice appealing because it facilitates task completion and goal accomplishment.

In contrast, *supportive voice* is affirming communication that strengthens social relations, reinforces team norms, and preserves harmony (Burris, 2012; Maynes & Podsakoff, 2014). Supportive voice engenders relational loyalty and collaboration as voicers speak up to defend others' ideas (Maynes & Podsakoff, 2014). In maintaining social connections and supporting team values, supportive voice may signal one's *social capital*, or relational goodwill via social norms and affiliative relationships (Adler & Kwon, 2002; Coleman, 1988). Supportive voice reflects relational qualities as it fosters connections with others through encouragement, cooperation, and care. As such, supportive voice may appeal to future team members because social capabilities bolster cooperation and satisfy teamwork needs. Taken together, considering voicers' human and social capital in team assembly decisions has significant theoretical and applied value.

The purpose of this manuscript is to examine the impact of team member voice as a behavioral signal of human and social capital on team assembly decisions. We first argue that challenging voice signals human capital because it promotes the perception that one completes quality work, which enhances voicers' personal reputation across the organizational network (e.g., McClean et al., 2018; Weiss & Morrison, 2019). We augment this view by proposing that supportive voice signals social capital because it fosters the formation of friendships among team members that subsequently serve as a catalyst for enhanced trust from others across the network (e.g., Adler & Kwon, 2002; Coleman, 1988). We then suggest that the reputation one builds across the network (i.e., human capital pathway) and the degree of trust one is afforded (i.e., social capital pathway) affect team assembly decisions. We examine these pathways independently as well as their simultaneous effects on team assembly.

Our article makes several theoretical contributions. First, we expand nascent team assembly research that focuses on team member attributes by instead examining challenging and supportive voice behaviors that predict team assembly. Given our interest in voice that encourages team assembly, our inquiry focuses on the positive elements and consequences of challenging and supportive voice rather than on potentially dysfunctional outcomes. We show that challenging voice is a task-oriented behavior that establishes perceptions of competence and quality work that predict a positive personal reputation (McClean et al., 2018; Weiss & Morrison, 2019). Furthermore, we show that the often-overlooked supportive voice also has an important function within teams—as forming friendships and assembling social connections are a critical factor others value in team assembly. Second, we evaluate the relative strength of a human capital pathway alongside a social capital pathway in predicting team assembly. We find that perceptions of quality work, in isolation, help voicers build a positive personal reputation across the broader network, making challenging voicers sought-after team members. Yet, the social capital perceptions of friendship that fuel trust are a stronger predictor of team assembly than human capital perceptions. The strength of the

Figure 1
Conceptual Model of the Influence of Voice on Team Assembly Decisions



social capital pathway reflects the value of supportive voice, particularly given the literature's predominant emphasis on challenging voice (Chamberlin, Newton, & LePine, 2017). Adding to this, we find that team members who possess both human and social capital are highly sought after in team assembly decisions. Importantly, we find support for our hypothesized effects above and beyond the effects of homophily, wherein individuals of similar characteristics are more likely to form ties together (McPherson, Smith-Lovin, & Cook, 2001). Finally, our work enriches understanding of the fluid nature by which individuals across a network assemble into temporary teams. A criticism of teams research is that teams are viewed as static and isolated entities (Mathieu, Hollenbeck, van Knippenberg, & Ilgen, 2017). Yet the movement of individuals across projects in the open talent economy challenges this description and necessitates a more dynamic view of team assembly. We therefore offer new insights regarding how individuals team up and shift across projects.

We tested our model in two multiwave studies conducted in an MBA program. This design enabled us to assess newly formed networks in which team structures were frequently reconfigured and team members agentically created temporary teams. Further, our study samples lacked formal leaders and were absent assigned status or hierarchy, a setting conducive for the expression and observation of voice behaviors (Erez, LePine, & Elms, 2002; Morrison, 2011). Given the potential primacy of social capital in networks (Casciaro & Lobo, 2008, 2015), we explicitly focus on the human capital pathway in Study 1 to consider its effects independently. In Study 2, we consider the social capital pathway in tandem with the human capital pathway to explain their independent and simultaneous effects on team assembly (see Figure 1).

Literature Review and Theoretical Development

Boundaries in many modern teams are fluid and flexible (Tannenbaum et al., 2012). As a result, the dynamic and self-directed assembly of individuals into teams has become common practice in some organizations and a necessity in others. Although some organizations explicitly encourage employees to self-assemble to facilitate the cross-pollination of ideas

and innovative projects across the organization (Bock, 2015), team assembly episodes often occur organically as individuals self-assemble for a specific objective. For example, a group of doctors, nurses, and medical specialists may form a temporary action team in response to a medical emergency (Valentine & Edmondson, 2015), athletes from separate teams might form a temporary team to compete in the Olympics (Dalal, Nolan, & Gannon, 2017), or actors, producers, production assistants, and others may temporarily team up to collaborate and film a creative feature (Bechky, 2006). As these examples suggest, team assembly often focuses on specific projects or goals that compress the life span of a team and create frequent collaboration opportunities.

The ad hoc nature of team assembly allows individuals to proactively configure (and reconfigure) themselves with others in the organization (Edmondson, 2012). The implication of dynamic team structures is that individuals may belong to multiple teams—simultaneously or over time (Crawford, Reeves, Stewart, & Astrove, 2019). As individuals move in and out of teams, the interactions they have and relationships they form in one team are likely to influence their perceived value as potential team members on other teams. Indeed, research has suggested that employees' experiences in one team can influence their behaviors in subsequent teams (Chen, Smith, Kirkman, Zhang, Lemoine, & Farh, 2019; Dalal et al., 2017). Consequently, individuals who actively assemble into teams are likely to seek out team members who exhibit behaviors that would facilitate the accomplishment of desired team objectives (Maloney, Shah, Zellmer-Bruhn, & Jones, 2019).

The fluidity of team assembly highlights the human and social capital needs of temporary teams. From a human capital perspective, team assembly opportunities bring individuals together who are knowledgeable and skilled in solving organizational problems, finding creative solutions, or altering the way things are currently done (Gómez-Zará, Paras, Twyman, Lane, DeChurch, & Contractor, 2019; Valentine & Edmondson, 2015). Thus, skilled and competent individuals would appear to possess human capital that could enable effective taskwork in teams (e.g., Marks, Mathieu, & Zaccaro, 2001). From a social capital perspective, team assembly opportunities allow for increased social connection and maintenance of work norms and knowledge (Dalal et al., 2017; Hollenbeck & Jamieson, 2015). Accordingly, individuals who exhibit positive social skills, such as friendliness and warmth, would appear to have social capital that may facilitate better teamwork and team processes (e.g., Marks et al., 2001).

To the extent that individuals' behaviors signal human and social capital, potential team members will likely perceive them as being able to contribute to task completion and the team's social environment (e.g., Balkundi & Harrison, 2006). For example, individuals will likely seek to form a team with those who demonstrate expertise, knowledge, and skill because their human capital would help accomplish team goals (Casciaro & Lobo, 2015). Individuals may also seek to form relationships with those who possess social capital because the positive social interaction and relationship building would boost team members' ability to support each other (Casciaro & Lobo, 2015). These human and social capital arguments are consistent with other frameworks that address how interpersonal exchanges that are instrumental/task oriented or social/relational oriented affect others' perceptions (Balkundi & Harrison, 2006; Cuddy, Glick, & Beninger, 2011; DeRue et al., 2011; Lincoln & Miller, 1979). Indeed, our treatment of human and social capital particularly parallels the competence and warmth framework, which suggests that competently viewed individuals are valued for their task-relevant knowledge, creativity, and capability, whereas warmly viewed

individuals are valued for their friendliness, cooperation, and trustworthiness (Fiske, Cuddy, & Glick, 2007). By incorporating research on competence and warmth, we highlight how voice that signals human or social capital motivates team assembly. In the section that follows, we first focus on the human capital pathway since social capital may overshadow perceptions of human capital and reduce observation of its effects (Casciaro & Lobo, 2015).

Study 1

Hypothesis Development

Challenging Voice as a Signal of Human Capital

Challenging voice refers to improvement-oriented ideas that enhance the efficiency of work tasks (Burris, 2012). As individuals suggest how to improve their work, they deviate from the status quo to propose changes in work processes (Van Dyne & LePine, 1998). On the one hand, constructive deviations attract others' attention as voicers' ideas stand out and differ from current organizational thinking (Hirschman, 1970), offering productive feedback and useful insights for improved team functioning (Hackman, 2002). On the other hand, challenging voice may stimulate conflict by inciting criticism or interpersonal disagreement (Burris, 2012; Van Dyne & LePine, 1998). Despite this theoretical tension, empirical work has consistently supported a more positive perspective of challenging voice, suggesting that its constructive nature has benefits to one's competence, likeability, and performance (Chamberlin et al., 2017; Grant, 2013; McClean et al., 2018; Weiss & Morrison, 2019; Whiting et al., 2012). Moreover, in team settings, the constructive nature of challenging voice is generally interpreted by team members as valuable to team effectiveness (e.g., Erez et al., 2002; Frazier & Bowler, 2015; Li et al., 2017). In line with these empirical findings, we focus our theorizing on the constructive aspect of challenging voice that others value based on its novelty and intention to enhance effectiveness.

Challenging voice is particularly important in teams since speaking up with new ways of doing things helps teams solve difficult problems, adapt to changing conditions, and perform at high levels (Devine & Phillips, 2001). By providing fresh ideas, challenging voice signals one's competence as voicers introduce intelligent contributions to team processes (Fiske et al., 2007). Fellow team members may be impressed with challenging voice because it indicates one's aptitude and knowledge of an issue, making it likely that the voicer is seen as contributing novel and useful suggestions that improve team functioning (McClean et al., 2018; Zhou & George, 2001). Furthermore, challenging voice may lead team members to infer that voicers produce high-quality work given that their unique ideas require skill and competence (Cuddy, Fiske, & Glick, 2008). That is, new ideas likely reflect challenging voicers' ability, creativity, and efficiency in enhancing team task needs (e.g., Cuddy et al., 2008; Fiske et al., 2007). This argument is consistent with research demonstrating that individuals whose ideas run counter to the status quo or who speak up with challenging voice are viewed as more skilled and competent in work-related activities (Bellezza, Gino, & Keinan, 2013; Weiss & Morrison, 2019). As such, team members are likely to gravitate toward such voicers because their ideas directly relate to task and goal completion (Sherf et al., 2018). Thus, by amending prevailing norms with original and creative ways of operating, challenging voice reflects human capital, and team members will likely view challenging voicers as competent and capable producers of quality work that is crucial to task completion in teams.

As individuals in teams interact within their broader work network, information about voicers' human capital naturally flows outside team boundaries to permeate the organizational network. For example, information may flow through boundary spanners who have task-oriented relationships with others external to the team (Marrone, 2010) and who may share task-related information about one's focal team members (Shah, Levin, & Cross, 2018). More informally, fluid team boundaries (Chen et al., 2019; Crawford et al., 2019) may facilitate opportunities to share information about voicers with others outside one's team. For instance, individuals may share human capital information, such as one's general competence and productive contributions to a team, through casual conversation (Brady, Brown, & Liang, 2017; Methot, Rosado-Solomon, Downes, & Gabriel, in press). Human capital information may also travel through "weak ties" (Granovetter, 1973) as individuals share task-related knowledge and identify team members who improve team effectiveness. Finally, individuals in a network are generally aware of "who knows what" (Burkhardt & Brass, 1990), especially individuals who are perceived as competent, skillful, and efficient with regard to team processes and outcomes.

The human capital perceptions generated by challenging voice and one's perceived quality work will permeate the broader network and construct one's personal reputation (Zinko, Ferris, Blass, & Laird, 2007; Zinko, Ferris, Humphrey, Meyer, & Aime, 2012). *Personal reputation* refers to the collective, enduring, positive perceptions others in a defined network form about an individual's general favorability and competence (Ferris, Blass, Douglas, Kolodinsky, & Treadway, 2003). Within a network, personal reputation reflects others' expectations about individuals' activities and skills (Ferris et al., 2003). These perceptions can be initiated by challenging voice, which demonstrates voicers' human capital value to a team by providing quality alternatives that facilitate team functioning (Subramaniam & Youndt, 2005). The human capital tethered to challenging voice, in turn, helps legitimize one's perceived skill and competence. As such, individuals who speak up with challenging voice become known for their task skill and proficiency, which fosters the development of their personal reputation in the broader network. Indeed, as Zinko et al. (2007: 177) have argued, "Perceived expertise by one's peers is the first step toward gaining a reputation," especially as evaluative information about one's productive contributions is shared with others outside the team (e.g., Brady et al., 2017; Shah et al., 2018).

Hypothesis 1: Challenging voice in teams is positively associated with personal reputation in a broader network, and quality work perceptions partially mediate this effect.

The Effects of Human Capital on Team Assembly

The human capital perceptions that underlie one's personal reputation affect the assembly of new teams across the organizational network. Given the dynamic structure of many teams (Chen et al., 2019; Tannenbaum et al., 2012), perceptions of personal reputation that reflect the human capital of potential team members may be especially salient (Zinko et al., 2007, 2012). Specifically, when individuals highlight their human capital (via challenging voice and quality work perceptions, resulting in an enhanced personal reputation), potential team members are likely to expect future demonstrations of similar behavior (Anderson & Shirako, 2008; Zinko et al., 2007). As such, personal reputation indicates that one would continue to be a competent and contributing team member and would therefore be an attractive human capital resource for future teams (Casciaro & Lobo, 2008; Contractor, 2013). In line with these arguments, we

propose that individuals will assemble into teams with others in the broader organizational network whom they view as having a personal reputation for producing quality work, whereas they will avoid those who lack such a reputation. This attraction or aversion effect is consistent with work suggesting that individuals form relationships with those who benefit them and their immediate team (Burt, 1997; Labianca & Brass, 2006; Seibert, Kraimer, & Liden, 2001), particularly as individuals seek out capable others in team assembly decisions.

Hypothesis 2: Within a network, prospective team members are likely to assemble into a team with individuals whom they view as possessing human capital, as reflected by personal reputation.

Method

Sample and Procedure

We collected data across multiple time periods with a cohort of full-time, first-year MBA students ($N = 87$) at a large U.S. university as part of a program assessment of team functioning. This sample was appropriate in that it provided us a complete network (i.e., the entire cohort) from which teams were configured and reconfigured across a 4-month period. The sample consisted of newly formed teams of individuals who had limited familiarity with each other given that they had just matriculated into their program. Teams worked on a variety of projects (e.g., data analysis, presentations, case analyses) for 7-week periods and thus represent the types of short-duration project teams typical of temporary teams (Dalal et al., 2017; Edmondson, 2012). Consistent with competitive environments in actual organizations (McPherson, 1983), teams in our sample also competed against each other via course simulations, case competitions, and other activities. Therefore, teams in our sample were motivated to complete tasks with efficiency and accuracy as would be required in organizations, rather than simply focusing on exposure to a team experience. Finally, the teams lacked a formal hierarchical structure, offering fertile opportunities for voice (Erez et al., 2002; Gerpott, Lehmann-Willenbrock, Voelpel, & Van Vugt, 2019; LePine & Van Dyne, 1998). Thus, the sample was ideal to study the development and spread of human capital—specifically, how challenging voice influences personal reputation via perceptions of quality work and the subsequent human capital impact on team assembly.

Prior to data collection, the MBA program office formed 20 teams composed of four or five team members. After teams completed their first quarter of classes and had worked together for 7 weeks, team members responded to measures of voice and quality work perceptions (Time 1). The MBA office then reassigned individuals to a new set of teams for the second quarter. At the end of the second 7-week quarter, we provided participants a roster of all students in their MBA cohort, and they identified up to three individuals whom they felt were most reputable in the network (Time 2). One month later (Time 3), individuals self-assembled into work teams for the third 7-week quarter without any team assignment direction from the MBA office.

Measures

Challenging voice. Team members rated voice in a round-robin approach with three items adapted from Maynes and Podsakoff (2014) that were the highest-loading items applicable to

MBA teams (1 = *not at all* to 5 = *a very great extent*). The challenging voice items were as follows: "Often suggests changes to team projects in order to make them better," "Often speaks up with recommendations about how to fix team-related problems," and "Frequently makes suggestions about how to do things in new or more effective ways in the team" ($\alpha = .91$). Perceptions of challenging voice were aggregated into an overall challenging-voice score for each team member by averaging all other team members' ratings of the focal individual (e.g., Chan, 1998; Sessions, Nahrgang, Newton, & Chamberlin, 2020). To assess consistency among team member ratings, we calculated $r_{wg(j)}$ with a uniform distribution and intraclass correlations (ICCs; James, Demaree, & Wolf, 1984; LeBreton & Senter, 2008): $r_{wg(j)} = .75$ ($SD = .26$), ICC(1) = .35, and ICC(2) = .64.

Quality work perceptions. Similar to challenging voice, team members rated quality work perceptions in a round-robin approach with the item, "To what extent does this team member produce high quality work?" (1 = *not at all* to 5 = *a very great extent*). We used this measure to assess others' perceptions of individuals' skill and competence in performing their work (Dooley & Fryxell, 1999), aligning with prior research that has associated competence with performance or completion of task-related activities (Heilman, Block, & Stathatos, 1997; Leslie, Mayer, & Kravitz, 2014). We computed a quality-work perceptions score for each team member by aggregating all other team members' ratings of the focal individual on this variable (e.g., Chan, 1998): $r_{wg(j)} = .76$ ($SD = .20$), ICC(1) = .31, and ICC(2) = .61. These aggregated values are consistent with peer ratings of performance (Viswesvaran, Ones, & Schmidt, 1996).

Personal reputation. Respondents identified up to three individuals across their class network whom they believed were highly reputable by responding to the prompt, "Which of your classmates is most highly regarded?" This item was based on the first item of the reputation scale created by Hochwarter, Ferris, Zinko, Arnell, and James (2007). The nomination process we employed is similar to the technique used by Zinko et al. (2012). A total of 181 personal-reputation nominations were received, with an average of 2.08 nominations per team member. We computed in-degree scores (i.e., a count of incoming nominations) for each participant in the personal reputation network. Participant responses were also converted to an 87×87 binary, directed network matrix (i.e., ties were not necessarily reciprocated).

Team assembly. Participants formed their own teams at Time 3. We used these team memberships to create an 87×87 binary and undirected network matrix reflecting whether pairs of participants assembled into a team together. A "team assembly tie" (denoted as 1 in a network matrix) indicated that a pair of participants in the corresponding row and column of the matrix had self-assembled into the same team. Participants who were on different teams did not share a team formation tie (denoted as 0 in the network matrix).

Analysis

We tested Hypothesis 1 with maximum likelihood estimation in Mplus 7.4 (Muthén & Muthén, 2015). Because individuals in our sample were configured in work teams, we tested a model nested in the Time 1 team using the "twolevel" command in Mplus (Raudenbush & Bryk, 2002). Given that Hypothesis 1 examines the indirect effects of challenging voice on personal reputation and the distribution of this indirect effect is not

normally distributed, we calculated bias-corrected confidence intervals with a Monte Carlo simulation of 20,000 resamples in RMediation (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Selig & Preacher, 2008).

We tested Hypothesis 2 with exponential random graph models (ERGMs) using the statnet package in R (Handcock, Hunter, Butts, Goodreau, & Morris, 2003) to account for the nonindependence of relational data (Lusher, Koskinen, & Robins, 2012; Wasserman & Faust, 1994). A central advantage of ERGM methodology is the ability to account for endogenous dependencies in social networks (i.e., innate network tendencies, such as reciprocity in personal-reputation ties) in tandem with hypothesized patterns of social relationships (Lusher et al., 2012). Furthermore, ERGMs have the capability of modeling interdependencies that occur as part of the structural dependence of social relationships (Snijders, 2011; Snijders, Pattison, Robins, & Handcock, 2006). By accounting for the influence of endogenous dependencies, exogenous dependencies, and structural interdependencies in the ERGM, we provide a robust test of our hypothesis to determine the extent to which actors assemble teams due to personal reputation in the network as opposed to actors assembling teams at random.

Controls. The maximum likelihood estimation model (Hypothesis 1) controlled for extraversion (i.e., individuals' tendency to speak up; $\alpha = .81$), agreeableness (i.e., individuals' tendency to facilitate interpersonal connections; $\alpha = .78$), and conscientiousness (i.e., individuals' tendency to be hardworking; $\alpha = .79$) with 10 items each from Goldberg (1992; 1 = *strongly disagree* to 5 = *strongly agree*), given that these traits predict effective team activities (Bell, 2007). We reasoned that individuals may seek out intelligent team members (Casciaro & Lobo, 2008), so we controlled for cognitive ability with individuals' GMAT or GRE percentile ranking. We also controlled for gender given its effects on team assembly (Lungeanu et al., 2014). Finally, we controlled for team processes, which have been shown to influence team member attitudes (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; $\alpha = .92$; 1 = *not at all* to 5 = *a very large extent*) using 10 items corresponding to the process dimensions described by Marks et al. (2001). A sample item is "Coordination: Orchestrates the sequence and timing of team members' actions."

The ERGM (Hypothesis 2) controlled for the number of ties in the network and the likelihood that those ties formed by random chance (i.e., edges) as well as homophily due to prior team membership based on actors' tendency to nominate team members from previously shared teams in Time 1 or Time 2 (Maloney et al., 2019). We also controlled for homophily due to personal reputation by evaluating the absolute difference in personal reputation scores within dyads since team members may be apt to form relationships with similar others (Hinds, Carley, Krackhardt, & Wholey, 2000; McPherson et al., 2001). Consistent with prior research (Forney, Schwendler, & Ward, 2019; Goodreau, Handock, Hunter, Butts, & Morris, 2008; Morris, Handcock, & Hunter, 2008), we utilized the "absdiff" parameter in the R statnet package to estimate tie formation among individuals with a higher absolute difference in personal reputation since the calculation of similarity/dissimilarity was a continuous variable. Whereas a positive and significant estimate for the "absdiff" parameter indicates a lack of homophily, such that individuals with greater disparity in personal reputation scores are more likely to assemble together, a negative and significant parameter estimate indicates the presence of homophily. Finally, given that the team assembly network is an Actors $\times$ Teams network (i.e., two actors share a tie if they are members of the same team), we could not

Table 1
Descriptive Statistics, Correlations, and Reliabilities of Study Variables (Study 1)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Extraversion	3.64	0.55	(.81)							
2. Agreeableness	4.28	0.37	.13	(.78)						
3. Conscientiousness	4.06	0.44	.18	.41***	(.79)					
4. Cognitive ability	0.73	0.18	–.03	.01	–.17	—				
5. Gender	0.70	0.46	.01	–.10	–.07	.14	—			
6. Team processes (Time 1)	3.51	0.82	–.03	.02	.08	.13	.16	(.92)		
7. Challenging voice (Time 1)	3.18	0.67	.27*	.05	.13	–.16	.01	.07	(.91)	
8. Quality work perceptions (Time 1)	3.97	0.59	.09	–.04	.22*	.02	.14	.09	.57***	—
9. Personal reputation (Time 2)	2.08	4.38	.18	.06	.09	.11	.02	–.06	.17	.27*

Note: $N = 87$. Reliability estimates are reported on the diagonal. Gender coded as 0 = female; 1 = male.
*$p < .05$.
**$p < .01$.
***$p < .001$.

include the maximum likelihood model controls in the ERGMs. This is because the number of in-degree ties a node has in the team assembly network is a function of team size rather than nominations, as would be the case in an Actor × Actor network of nominations.

Results

We report descriptive statistics, reliabilities, and correlations among our study variables in Table 1. Hypothesis 1 predicted that challenging voice is positively associated with personal reputation, and team members' perceptions of quality work partially mediate this effect. As reported in Table 2, we found a significant effect of challenging voice on quality work perceptions ($b = .52$, $SE = .10$, $p < .001$) and a significant effect of quality work perceptions on personal reputation ($b = 1.20$, $SE = 0.29$, $p < .001$). Supporting Hypothesis 1, the bias-corrected indirect effect is positive and significant (indirect effect = .62, 95% confidence interval [CI] = [0.29, 1.01]).

Hypothesis 2 considers the effects of individuals' personal reputation scores on team assembly after controlling for homophily due to prior team membership and homophily due to personal reputation. As reported in Table 3, we estimated an ERGM where the team assembly network is the dependent variable and found that individuals were more likely to assemble into teams with those they had endorsed as highly reputable (Estimate = 1.45, $SE = 0.23$, $p < .001$). Thus, Hypothesis 2 is supported.

Discussion

Study 1 examines how challenging voice affects the formation of voicers' personal reputation in a network via a human capital pathway. Consistent with recent research (McClean et al., 2018; Weiss & Morrison, 2019), we find that individuals who speak up with challenging voice are viewed in a positive light and seen as producing quality work and possessing a positive personal reputation. This pattern of relationships remains consistent even when

Table 2
Regression Results Predicting Quality Work Perceptions and Personal Reputation (Study 1)

	Quality Work Perceptions				Personal Reputation			
	Model 1		Model 2		Model 3		Model 4	
Variable	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Extraversion	.06	.10	–.11	.09	0.57*	.29	0.61*	.30
Agreeableness	–.25	.16	–.25*	.12	–0.01	.49	0.34	.39
Conscientiousness	.38*	.17	.34**	.13	0.59	.36	0.09	.29
Cognitive ability	.16	.24	.48*	.22	1.87**	.71	1.11	.83
Gender	–.16	.14	–.15	.13	–0.28	.39	0.00	.35
Team processes (Time 1)	.04	.09	–.01	.05	–0.26	.21	–0.23	.20
Challenging voice (Time 1)			.52***	.10	0.41	.22	–0.11	.22
Quality work perceptions (Time 1)							1.20***	.29

Note: $N = 87$.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 3
Exponential Random Graph Model Results of the Personal Reputation Network on the Team Assembly Network (Study 1)

Parameter	Estimate	*SE*
Network edges	–2.99***	0.06
Homophily due to prior team membership (Time 1)	0.69***	0.21
Homophily due to prior team membership (Time 2)	0.75***	0.20
Homophily due to personal reputation (Time 2)	–0.03*	0.01
Personal reputation network (Time 2)	1.45***	0.23

Note: There were 3,741 possible undirected ties in the team assembly network (Time 3).
*$p < .05$.
**$p < .01$.
***$p < .001$.

controlling for the effects of homophily. Moreover, the benefits of human capital accrue to individuals in the broader network as they are more likely to be sought after in team assembly decisions.

Given the vast majority of voice research focuses on challenging voice (Chamberlin et al., 2017), our examination of the human capital pathway provides an important area of focused inquiry. However, the primacy of affiliative-based social capital (Adler & Kwon, 2002; Casciaro & Lobo, 2008, 2015; Nebus, 2006) suggests that the human capital effects may not be as strong in the presence of a social capital pathway. Further, the sample size in our maximum likelihood models is modest, and a subsequent study with a larger sample size could

help guard against Type II error that may have affected Study 1 results. In Study 2, we consider the human capital pathway (i.e., challenging voice → quality work perceptions → personal reputation) while also examining the social capital pathway (i.e., supportive voice → friendship → trust) and utilizing a larger sample. Considering the human capital pathway both alongside and together with the social capital pathway provides a more complete test of the effects of voice on team assembly.

Study 2

Hypothesis Development

Supportive Voice as a Signal of Social Capital

In contrast to challenging voice, supportive voice reinforces the status quo as individuals affirm the value of maintaining a current course of action or particular team process (Burris, 2012; Maynes & Podsakoff, 2014). Although initial conceptualizations of supportive voice paint a picture of mindless "yes men" who do not question others (Graham, 1991; Prendergast, 1993), recent refinements to the construct suggest that supportive voicers encourage others to share their perspectives, endorse others' ideas, and voluntarily stand up for existing norms (Burris, 2012). Indeed, supportive voice indicates a willingness to act in ways that benefit others by preserving social functioning and accommodating others' viewpoints (Cuddy et al., 2008; Fiske et al., 2007). In doing so, supportive voice facilitates team effectiveness by ensuring that functional and worthwhile elements of team processes remain intact. Moreover, research has demonstrated that supportive voice is associated with loyalty in team members, as it shows a concern for others' well-being (Burris, 2012; Maynes & Podsakoff, 2014). Thus, in conveying a desire to affirm team norms and act in ways that build goodwill and loyalty, supportive voice signals voicers' social capital (e.g., Adler & Kwon, 2002; Bolino, Turnley, & Bloodgood, 2002; MacKenzie et al., 2011).

Those who engage in supportive voice are viewed as signaling social capital because their affiliative behavior reflects a sincere desire for warm and friendly connections among team members (Adler & Kwon, 2002; Fiske et al., 2007). That is, supportive voice creates social capital as it indicates that voicers are attuned to social dynamics, willing to behave in cooperative ways, and desirous to build relationships. By enhancing norms within the team, supportive voice also fosters a sense of obligation among others and a desire to facilitate social connections (Nahapiet & Ghoshal, 1998). Thus, supportive voice is a fundamentally relational behavior since it actively fosters collaborative ties with specific targets toward whom one can share support, encouragement, or assistance. Although supportive voice may elicit negative outcomes, such as groupthink (e.g., Janis 1972), research suggests that the relational behavior is appreciated and viewed as a sincere, warm, and inviting gesture to build friendship-based social bridges (Bolino et al., 2002; Cuddy et al., 2008; Fiske et al., 2007; MacKenzie et al., 2011). Given that friendship is a key manifestation of one's social capital (Adler & Kwon, 2002; Coleman, 1988), supportive voicers are likely to establish friendly relationships with other team members. Such friendships occur as supportive voicers are perceived to set aside self-motivating factors and instead lend support to others' viewpoints in ways that maintain harmony, demonstrate care, and signal consideration.

Friendships generated by supportive voice extend beyond team borders as colleagues within the network see the social capital value of one's relational behaviors. Similar to how

information about human capital may spill outside team borders into the broader organization, organizational members are also likely aware of individuals who build connections with others, maintain friendships, and encourage group members (Burkhardt & Brass, 1990). Such positive information about individuals' relational behavior may travel through "friends of friends" (Boissevain, 1974), be divulged in work-related interactions (e.g., Marrone, 2010) or informal conversation (Methot et al., in press), and accrue aggregate social capital perceptions for voicers. Research has shown the value of such spillover as friendly individuals with high relational visibility exert broader influence (e.g., Carter, DeChurch, Braun, & Contractor, 2015) and increase their social-capital-rich relational interactions with others (Bowler & Brass, 2006).

The friendships that form from supportive voice, which emphasizes a voicer's other-oriented concern for harmonious relationships (Burris, 2012), further foster perceptions of one's social capital. Scholars have suggested that social capital consists of relational facets, including norms (i.e., consensus in a collective), obligation (i.e., commitment to group activities), identification (i.e., perceived oneness with a group), and trust (Nahapiet & Ghoshal, 1998). We focus explicitly on trust, or one's willingness to be vulnerable to another individual (Mayer, Davis, & Schoorman, 1995). This focus is grounded in research that shows that trust can develop through rapid assessments as individuals interact with potential team members (McKnight, Cummings, & Chervany, 1998; Meyerson, Weick, & Kramer, 1996; Schilke & Huang, 2018), making it critical to team assembly. Indeed, "trust is a feature of social capital and has been recognized as a central mechanism in the coordination of expectations, interactions, and behaviors among individuals" (Costa, Bijlsma-Frankema, & de Jong, 2009: 2000). As such, trust is strongly aligned with perceptions of social capital in a defined network (Adler & Kwon, 2002; Bolino et al., 2002; Coleman, 1988) and critical to subsequent team functioning (Costa, Fulmer, & Anderson, 2018; De Jong, Dirks, & Gillespie, 2016; Nahapiet & Ghoshal, 1998).

As evidence of one's social capital, trust is grounded in the belief that a trustee will act in ways that are beneficial and fair. Trust implies that individuals are well intentioned, reliable, and willing to cooperate (Nahapiet & Ghoshal, 1998). Friendship offers these indicators, as those who connect with others are perceived to behave in ways that warrant those connections, including acting justly, encouraging cooperation, and being dependable (e.g., Methot, LePine, Podsakoff, & Christian, 2016). Supporting this view, scholars have argued that relational citizenship behaviors enhance social capital because they build trust among others in a network (Bolino et al., 2002; MacKenzie et al., 2011). This is likely due to the underlying relational bonds that comprise feelings of trust (McAllister, 1995) as well as individuals' tendency to seek support and rely on the benevolence of their social capital connections (e.g., Nebus, 2006). In sum, supportive voice signals social capital as it facilitates friendships. These friendship bonds, in turn, foster relational goodwill and provide broader evidence that an individual can be trusted.

Hypothesis 3: Supportive voice in teams is positively associated with trust in a broader network, and friendship partially mediates this effect.

The Effects of Social Capital on Team Assembly

The perceptions of trust that emerge due to supportive voice are likely to influence team assembly decisions. The connection between trust and team assembly is rooted in

social capital foundations that have described how trust can quickly form through social interactions with others in a network (e.g., McKnight et al., 1998; Meyerson et al., 1996; Schilke & Huang, 2018). For example, Inglehart (1997: 188) has argued that "social capital consists of a culture of trust and tolerance, in which extensive networks of voluntary associations emerge." In line with the notion that trust connects past behaviors with expected future behaviors (Costa et al., 2009), potential team members may believe that individuals who have engaged in past affiliative behavior will do the same in an upcoming team. This expected consistency would appeal to future team members, as supportive behavior and the relational connections it generates generally facilitate an obligation of continued cooperation that leads to future collaborations (Nahapiet & Ghoshal, 1998). Thus, given that "a group within which there is extensive trustworthiness and extensive trust is able to accomplish much more than a comparable group without that trustworthiness and trust" (Coleman, 1988: 101), individuals will seek out others they trust when forming teams because they expect their colleagues' social capital to continue yielding positive outcomes relevant to team functioning.

Hypothesis 4: Within a network, prospective team members are likely to assemble into a team with individuals whom they view as possessing social capital, as reflected by trust.

The Simultaneous Effects of Human and Social Capital on Team Assembly

Challenging and supportive voice are likely to foster perceptions of personal reputation or trust that influence team assembly decisions. Yet, individuals may engage in both forms of voice, leading to high levels of human *and* social capital. This potential overlap is often referred to as a *multiplex relationship*, in which individuals rely on others for both task and relational support (Methot et al., 2016). Multiplex relationships occur as individuals bundle their interactions and seek out others based on both human and social capital components (Burt & Schøtt, 1985). Although there can be drawbacks to multiplex relationships, such as coordination costs (Crawford & LePine, 2013), resource drain (Methot et al., 2016), conflict (Hood, Cruz, & Bachrach, 2017), or incongruent perceptions (Cuddy et al., 2011), multiplex relationships also have significant value. Individuals who possess both task and relational connections among team members are likely to have a stronger influence on team outcomes (Oh, Labianca, & Chung, 2006), and others in the network will likely value their multiplex connections. We specifically propose that individuals high on both personal reputation and trust will be sought after as potential team members because others will see the value of producing high-quality work and being reputable as well as the value of being friendly and trusted. This argument is consistent with research suggesting that multiplex relationships can yield rapidly accruing benefits that amplify relationships and potential team effectiveness (Crawford & LePine, 2013) along with research demonstrating that multiplex relationships provide greater access to resources and information and enhance team effectiveness (Methot et al., 2016; Sparrowe, Liden, Wayne, & Kraimer, 2001).

Hypothesis 5: Within a network, prospective team members are likely to assemble into a team with individuals whom they view as possessing both human capital, as reflected by personal reputation, and social capital, as reflected by trust.

Method

Sample and Procedure

We collected data across multiple time periods with a separate cohort of full-time first-year MBA students (N = 102) following a similar data collection procedure as Study 1. Prior to data collection, the MBA program office formed 24 teams composed of four or five team members. After team members worked together in teams for their first (7-week) quarter, team members responded to measures of challenging voice, supportive voice, quality work perceptions, and friendship (Time 1). The MBA office then reassigned individuals to a different set of teams for the second (7-week) quarter. After this period, we provided participants a roster of all students in their MBA cohort, and they identified up to three individuals they felt were most reputable and trusted in the entire network (Time 2). Approximately 1 month later (Time 3), individuals self-assembled into work teams.

Measures

Challenging and supportive voice. Team members rated each team member's voice in a round-robin approach. The challenging-voice items were the same as those in Study 1 (α = .88). The items for supportive voice were as follows: "Expresses support for productive teamwork procedures when others express uncalled for criticisms of the procedures," "Speaks up in support of team procedures and norms that have merit when others raise unjustified concerns about the procedures and norms," and "Defends our team's projects and procedures that are worthwhile when others unfairly criticize the team's projects and procedures" (Maynes & Podsakoff, 2014; α = .88; 1 = *not at all* to 5 = *a very great extent*). We computed scores for both challenging voice and supportive voice for each participant by aggregating team members' ratings of the focal individual (e.g., Chan, 1998; Sessions et al., 2020): challenging voice, $r_{wg(j)}$ = .75 (*SD* = .27), ICC(1) = .18, ICC(2) = .42; supportive voice, $r_{wg(j)}$ = .69 (*SD* = .31), ICC(1) = .05, ICC(2) = .13. The potentially low aggregation values for supportive voice are in line with prior scholarly guidance (Bliese, 2000; James 1982) and recent voice research (Lee & Farh, 2019) suggesting that individuals may not engage in consistent levels of supportive voice with each team member.

Quality work perceptions and friendship. Participants rated quality work perceptions with the same round-robin approach and item as Study 1. Friendship was rated by each team member with the item, "To what extent would you say you are friends with this team member (e.g., hang out, share hobbies, or confide in each other about personal matters)?" (1 = *not at all* to 5 = *a very great extent*). We averaged ratings across team members: quality work perceptions, $r_{wg(j)}$ = .71 (*SD* = .28), ICC(1) = .22, ICC(2) = .49; friendship, $r_{wg(j)}$ = .51 (*SD* = .33), ICC(1) = .10, ICC(2) = .26. Given that friendship may be asymmetrical and targeted (Ibarra, 1993; Nahapiet & Ghoshal, 1998), the low r_{wg} agreement for friendship is not unexpected. Thus, we again created an aggregated individual attribute to computationally investigate our hypotheses and note that this additive approach (e.g., Chan, 1998) does not require any specified level of agreement (LeBreton & Senter, 2008). Yet, to confirm this relational link in our model, we ran a supplemental ERGM of supportive voice and friendship and found team members were more likely to be friends with those they rated high in supportive voice

(Estimate = .58, *SE* = .22, $p = .009$), which provides us additional confidence in the relational aspects and operationalization of our social capital variables.

Personal reputation and trust. Respondents identified up to three individuals across the cohort whom they believed were highly reputable ("Which of your classmates has the best reputation [most highly regarded and highly respected]?" Hochwarter et al., 2007; Zinko et al., 2012) and trusted ("Which of your classmates do you trust most?"). A total of 209 personal reputation and 232 trust nominations were received, with an average of 2.05 personal reputation and 2.27 trust nominations per team member. We calculated in-degree scores (i.e., a count of incoming nominations) for each participant in both the personal reputation and trust networks. Participant responses were also converted to an 102×102 binary, directed network matrices.

Multiplex personal reputation and trust network. We created a network that combined the personal reputation and trust nominations. A "multiplex tie" (denoted as 1 in the combined network matrix) indicated that a participant nominated a given colleague in both the personal reputation network and the trust network. In contrast, participants with nonoverlapping ties (denoted as 0 in the combined network matrix) did not nominate a given colleague in both the personal reputation network and the trust network. Participant responses were converted to a 102×102 binary, directed network matrix in which ties were not necessarily reciprocated.

Team assembly. Participants formed their own teams at Time 3. We used these team memberships to create a 102×102 binary and undirected network matrix reflecting whether pairs of participants had assembled into a team together. As in Study 1, the presence of a "team assembly tie" indicated that a pair of participants assembled into the same team at Time 3.

Controls. Our maximum likelihood models (Hypotheses 1 and 3) controlled for extraversion ($\alpha = .84$), agreeableness ($\alpha = .86$), conscientiousness ($\alpha = .81$), cognitive ability, gender, and team processes ($\alpha = .90$) with the same measures and response scales as Study 1. Also in line with Study 1, the ERGMs (Hypotheses 2, 4, and 5) controlled for edges, homophily due to prior team membership, homophily due to personal reputation, homophily due to trust, and homophily due to multiplex personal reputation and trust.

Results

We tested Hypotheses 1 and 3 using maximum likelihood estimation in Mplus 7.4 (Muthén & Muthén, 2015) and Hypotheses 2, 4, and 5 with the statnet package in R (Handcock et al., 2003). Significant Level 2 variance was present in one of our endogenous variables (friendship, $\tau^2 = .26$, $p = .005$, ICC[1] = .47), so we tested our models nested in the Time 1 team consistent with Study 1. Table 4 reports the descriptive statistics and correlations of our study variables. Prior to testing our hypotheses, we ran a confirmatory factor analysis with challenging and supportive voice. A two-factor model of challenging voice and supportive voice, $\chi^2(8) = 10.85$, $p = .211$; comparative fit index (CFI) = .99; root mean square error of approximation (RMSEA) = .06; standardized root mean squared residual (SRMR) = .03, fit the data better than an alternative one-factor model, $\chi^2(9) = 43.48$, $p < .001$; CFI = .91; RMSEA = .19;

Table 4
Descriptive Statistics, Correlations, and Reliabilities of Study Variables (Study 2)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Extraversion	3.46	0.64	(.84)										
2. Agreeableness	4.10	0.54	.31**	(.86)									
3. Conscientiousness	3.83	0.51	.20*	.32**	(.81)								
4. Cognitive ability	0.74	0.17	–.20*	–.29**	–.13	—							
5. Gender	0.61	0.49	–.01	–.03	–.07	.43***	—						
6. Team processes (Time 1)	3.97	0.68	.07	.13	.05	.04	.01	(.90)					
7. Challenging voice (Time 1)	3.55	0.61	.21*	.07	.27**	–.08	–.28**	.03	(.88)				
8. Supportive voice (Time 1)	3.66	0.56	.29**	.03	.32**	–.02	–.17	.02	.73***	(.88)			
9. Quality work perceptions (Time 1)	4.17	0.65	.09	–.12	.18	.04	–.19	.06	.66***	.53***	—		
10. Friendship (Time 1)	3.38	0.73	.39***	.13	.11	–.19	–.05	.17	.44***	.45***	.43***	—	
11. Personal reputation (Time 2)	2.05	3.57	.14	–.08	.10	.12	–.06	.00	.31**	.25*	.32**	.22*	—
12. Trust (Time 2)	2.27	2.11	.25*	.05	–.01	–.18	–.18	.01	.31**	.26**	.21*	.39***	.47***

Note: $N = 95$ to 102. Reliability estimates are reported on the diagonal. Gender coded as 0 = female; 1 = male.
*$p < .05$.
**$p < .01$.
***$p < .001$.

SRMR = .05, consistent with previous construct validation efforts (Burris, 2012; Maynes & Podsakoff, 2014).

Hypothesis 1 predicted that challenging voice would be positively associated with personal reputation via team members' quality work perceptions. As reported in Model 2 and Model 6 of Table 5, there was a significant effect of challenging voice on quality work perceptions ($b = .60$, $SE = .11$, $p < .001$) but not a significant effect of quality work perceptions on personal reputation when accounting for the social capital pathway ($b = .49$, $SE = .27$, $p = .071$). Although the indirect effect of challenging voice on personal reputation is significant when the social capital pathway is not included in our model, thereby replicating our Study 1 findings (indirect effect = .48, 95% CI = [.04, .97]), the indirect effect of challenging voice on personal reputation is not significant when accounting for the social capital pathway (indirect effect = .29, 95% CI = [–.02, .65]). Thus, Hypothesis 1 is not supported.

Hypothesis 2 proposed that personal reputation affects team assembly. In line with Study 1 findings, we found that personal reputation significantly predicted team assembly when controlling for homophily due to prior team membership, homophily due to personal reputation, and homophily due to trust and excluding the social capital pathway (Estimate = .72, $SE = .29$, $p = .012$). As shown in Model 1 of Table 6, when accounting for each of these forms of homophily and the social capital pathway, however, we find that individuals were neither more nor less likely to assemble into teams with others they endorsed as reputable (Estimate = .26, $SE = .31$, $p = .404$). Thus, Hypothesis 2 was not supported.

Hypothesis 3 predicted that supportive voice is positively associated with trust in the broader network through team member friendship. When controlling for the human capital pathway as reported in Table 5, there was a significant effect of supportive voice on friendship (Model 4; $b = .41$, $SE = .15$, $p = .007$) and a significant effect of friendship on trust (Model 8; $b = .34$, $SE = .16$, $p = .028$). In support of Hypothesis 3, we find a positive and significant indirect effect of supportive voice on trust through friendship (indirect effect = .14, 95% CI = [.01, .36]).

Hypothesis 4 proposes that individuals will assemble into teams with those they trust at the network level. As shown in Model 1 of Table 6—and while controlling for the human capital pathway, homophily due to prior team membership, homophily due to personal reputation, and homophily due to trust—we find support for Hypotheses 4 as individuals were more likely to form teams with others they trusted (Estimate = 1.84, $SE = 0.19$, $p < .001$).

Finally, Hypothesis 5 predicted that individuals will assemble into teams with those they view as possessing high levels of both personal reputation and trust at the network level. As shown in Model 2 of Table 6, we find that individuals who were high in human and social capital were sought after in team assembly decisions (Estimate = 1.66, $SE = 0.47$, $p < .001$), even when controlling for homophily due to prior team membership and homophily due to multiplex personal reputation and trust, which provides support for Hypothesis 5.

Discussion

Study 2 examines the human and social capital effects of challenging and supportive voice on personal reputation and trust in the broader network while controlling for homophily. Study 2 offers a replication and extension of Study 1 in a separate and larger network. Although we find that individuals who speak up with challenging voice are seen as

Table 5

Regression Results Predicting Quality Work Perceptions, Friendship, Personal Reputation, and Trust (Study 2)

	Quality Work Perceptions				Friendship				Personal Reputation				Trust			
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
Variable	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Extraversion	.12	.10	–.03	.07	.42***	.11	.27*	.11	0.45*	.22	0.37	.24	.28	.15	.21	.16
Agreeableness	–.24	.13	–.19*	.10	–.06	.13	.01	.12	–0.17	.36	–0.26	.36	–.08	.17	–.11	.18
Conscientiousness	.27**	.09	.07	.11	.03	.15	–.18	.13	0.13	.28	0.18	.31	–.28	.15	–.21	.13
Cognitive ability	.48	.43	.32	.32	–.68	.43	–.86*	.33	2.04	1.04	2.31*	1.02	–.68	.40	–.31	.47
Gender	.36*	.15	.09	.11	–.03	.20	–.25	.18	0.15	.43	0.20	.38	.12	.22	.21	.26
Team processes (Time 1)	.06	.13	.05	.10	.16	.14	.14	.10	–0.08	.20	–0.07	.19	.02	.12	–.02	.11
Challenging voice (Time 1)			.60***	.11			.27	.14	0.74*	.34	0.37	.33	.31	.18	.26	.19
Supportive voice (Time 1)			.13	.14			.41**	.15	0.17	.41	–0.04	.44	.16	.16	.02	.17
Quality work perceptions (Time 1)											.49	.27			–.06	.17
Friendship (Time 1)											.53*	.22			.34*	.16

Note: $N = 92$.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 6
Exponential Random Graph Model Results of the Personal Reputation Network and the Trust Network on the Team Assembly Network (Study 2)

	Model 1		Model 2	
Parameter	Estimate	*SE*	Estimate	*SE*
Network edges	–3.16***	.08	–3.29***	.07
Homophily due to prior team membership (Time 1)	0.13	.25	0.45	.24
Homophily due to prior team membership (Time 2)	0.62**	.23	0.71**	.22
Homophily due to personal reputation (Time 2)	–0.02	.02		
Homophily due to trust (Time 2)	–0.10**	.03		
Homophily due to multiplex personal reputation and trust (Time 2)			–0.11	.07
Personal reputation network (Time 2)	0.26	.31		
Trust network (Time 2)	1.84***	.19		
Multiplex personal reputation and trust network (Time 2)			1.66***	.47

Note: There were 5,151 possible undirected ties in the team assembly network (Time 3).
*$p < .05$.
**$p < .01$.
***$p < .001$.

conducting high-quality work in their team, quality work perceptions do not affect personal reputation when accounting for the social capital pathway. In contrast, individuals who speak up with supportive voice create friendships in their work teams that help build relationships of trust with others in the broader network. Regarding team assembly, we found confirming evidence that personal reputation predicts team assembly in isolation; however, these human capital effects become nonsignificant when accounting for the social capital pathway. Thus, when examining factors that influence team assembly, we find that individuals are more likely to rely on social capital signals—and form teams with others they trust and who hold similar levels of trust as them—than on human capital signals. Finally, individuals are also likely to seek multiplex ties, or those whom they view as possessing both human and social capital, when assembling work teams.

General Discussion

Theoretical Implications

Our work makes several theoretical contributions. First, we demonstrate the value of voice in team assembly decisions. Indeed, voice is a highly visible behavior that others notice and "hear" (Hirschman, 1970), particularly to the extent that perceptions of voicers extend beyond the borders of one's immediate team. Our work, therefore, advances previous team assembly research that has focused on general individual attributes (Contractor, 2013; Guimerà et al., 2005; Lungeanu et al., 2014) to showcase the contribution of voice behaviors that help meet taskwork and teamwork demands. The need to rely on behavioral signals in teams is increasingly important in today's virtual operating environment, in which individuals' characteristics may not be previously known or apparent. Consistent with a growing body of work on the critical role of voice in team interactions and to team effectiveness

(LePine & Van Dyne, 1998; Li et al., 2017; MacKenzie et al., 2011; Sherf et al., 2018), our work underscores the value of voice as communication in team action processes (LePine et al., 2008). Further, given that voice provides both insightful perceptions of existing team members and transcends boundaries to indicate who might be valuable as a future team member, our work demonstrates that voice can provide a pulse of current and future team members' human and social capital.

Relatedly, the perceptions of human and social capital generated by voice influence how voicers are viewed within their team and broader organizational network. In line with recent work on voice and reputation (McClean et al., 2018; Weiss & Morrison, 2019), we find evidence that challenging voice, in isolation, signals perceptions that one completes quality work and is a critical link along the human capital pathway through which individuals can become known at work. However, we also find support for a social capital pathway in which the friendship and trust that emerge from supportive voice significantly influence team assembly decisions. Further, we find that speaking up with both types of voice is highly influential in team assembly decisions, as the resultant perceptions of personal reputation and trust together offer a strong signal to potential team members. Thus, team members may find value in speaking up with new ideas *and* supporting others' ideas to optimize the development of human and social capital in their immediate and broader work networks. It is important to note that we found support for these effects even after controlling for multiple types of homophily (i.e., homophily due to prior team membership, homophily due to personal reputation, homophily due to trust, and homophily due to multiplex personal reputation and trust) and find that our results persist above and beyond these effects. Specific to homophily due to prior team membership, our work indicates the possibility that individuals who have not yet worked together on a team appear to proactively seek out fresh talent among individuals whom they believe are highly regarded or are highly trusted for future team assembly episodes. This finding enhances our understanding of how and why individuals might reach out and team up with unfamiliar others and has implications to the motivations behind workplace interactions that facilitate team formation and functioning. In sum, our work offers a robust examination of challenging and supportive voice behaviors that drive team assembly decisions due to the human and social capital perceptions they foster in team members and subsequent coworkers within the broader network.

Second, our reliance on human and social capital to explain team assembly has implications to other related frameworks. Consistent with prior work that individuals prefer warmth over competence (Fiske et al., 2007) or affiliative ties over instrumental ties (Casciaro & Lobo, 2008, 2015), our work demonstrates that affirming social norms with supportive voice builds friendships and trust-based allies that others rely on when assembling teams, more so than the ties fostered through challenging voice, quality work perceptions, and personal reputation. Consequently, team members appear to value advocates who build affiliative bridges at work more so than those with instrumental skill who could yield very capable teams. We also found that individuals who possess both human and social capital are highly sought after in team assembly decisions. This combination of human and social capital extends work related to warmth and competence. Whereas research has suggested that individuals are often perceived to be warm and incompetent or competent and cold, but not warm and competent (Cuddy et al., 2008, 2011), our findings suggest that this may not always be the case. Instead, those high in human and social capital may be able to convey both perceptions through their

behavioral demonstrations of challenging and supportive voice that permeate their work network.

Third, our work also has implications for the voice literature. Challenging voice has been the focus of previous voice research, particularly related to the investigation of voice outcomes (Chamberlin et al., 2017). As a counterpoint to examinations of this prevailing voice type, our work brings to light the explanatory power of supportive voice within teams, demonstrating that those who speak up supportively are highly valued within the organizational network. This is a significant insight that could not have been derived from the existing voice literature and implies untapped theoretical value for supportive voice in collective situations. Given the relative neglect of supportive voice in the voice literature, our findings underscore its social capital value in team settings that may have been previously ignored. Understanding the full theoretical range of potential supportive voice benefits—boundary spanning, securing resources, or navigating relationships with leaders—could further enrich the voice literature.

Finally, we offer new insights by considering teams as dynamic entities, which moves beyond the predominant, yet criticized, norm of studying teams as stable units that operate with little influence across the organization (Mathieu et al., 2017). Our work implies that team boundaries are not solid or sacred and that individuals' within-team behaviors form lasting impressions with fellow team members that influence relationships with subsequent coworkers across the broader organizational network. These enduring views based on human and social capital signals influence others' desire to seek out (or avoid) potential team members when initiating projects and assembling teams. In this regard, we help explain how individuals who share ties form relationships and, by extension, offer implications for how subgroups might form within an organization (e.g., Gómez-Zará et al., 2019). In short, our study shows that signals of human and social capital in a team matter to the broader organization, particularly when team assembly settings are unstructured and dynamic.

Practical Implications

Our findings have implications for both employees and managers. Our study demonstrates the social consequences of speaking up and how different forms of voice shape others' views. Indeed, employees should be mindful that their voice signals their human and social capital value, particularly in forming new teams. Although it may be intuitive for employees to showcase their human capital through challenging voice, our study suggests that social capital perceptions fostered through supportive voice may be more beneficial. Employees may want to intentionally engage in supportive voice to signal social capital in order to establish friendships and trust among colleagues and, in the process, open the door for future collaborations. Building on this idea, it may be beneficial for employees to find opportunities to use challenging voice alongside supportive voice, as each voice type provides unique information to others about a voicer, which together can generate prime potential for being selected onto a team. Thus, what employees say within their work team matters—for both proximal within-team perceptions and perceptions across the organization.

Further, whereas prior work has called for managers to encourage challenging voice among employees (Chamberlin et al., 2018; Sherf, Tangirala, & Venkataramani, 2019), we suggest the value in also encouraging supportive voice. To this end, managers may need to coach

employees on how to engage in supportive voice. For instance, supportive voice may be less comfortable or spontaneous for those who tend to rely on their knowledge or expertise in work settings, and managers may need to create an environment to promote this behavior. Additionally, managers may want to deliberately include supportive voice, alongside challenging voice, among the participative behaviors that tend to be rewarded in order to foster more affiliative connections and create opportunities for enhanced team assembly episodes.

Limitations and Future Research

As with all research, there are limitations to our work that represent opportunities for future research. When individuals speak up in their team, we implicitly argued that quality work perceptions and friendships would form based on within-team perceptions expanding into the broader organizational network. Although our work provides a necessary foundation for the spread of human and social capital perceptions that permeate the broader network, we did not explicitly test the mechanisms by which these perceptions in discrete teams are transmitted to others in the organizational network. For example, employees are likely to have formal and informal associations with others outside their team (Balkundi & Harrison, 2006; Marrone, 2010; Oh, Chung, & Labianca, 2004), and these direct interactions may allow intermediaries to transmit information. Similarly, as individuals form functional relationships across team boundaries (Ancona & Caldwell, 1992) and move among multiple teams, future research could consider how information and resources are shared by word of mouth. In sum, a valuable line of inquiry could be to trace how information contained within teams spreads throughout a work network, leading to personal reputation or feelings of trust.

Additionally, although quality work perceptions and friendship are mechanisms well suited to represent human and social capital, scholars could consider other mediators that transmit these effects. For instance, challenging voice may foster perceptions of risk taking, resourcefulness, or creativity (e.g., Chamberlin et al., 2017; Zhou & George, 2001) within a team that subsequently form the basis of one's personal reputation within the organization. Similarly, supportive voice may act as an indicator of championing, inclusivity, or caring (e.g., Howell & Higgins, 1990; Weiss, Kolbe, Grote, Spahn, & Grande, 2018), which provides a foundation for trust. Examining these or other mediators could further illuminate the effects of challenging and supportive voice, particularly as they relate to perceptions of others within one's team and the extended network. Exploring additional mediators could also provide insights regarding how individuals perceive human and social capital resources in others and how these resources affect team assembly.

The nature of our student samples is also a limitation. It may be that the interpersonal interactions of the students vary compared with those in organizations. The MBA professionals, particularly in their first semester, may have been attuned to "reading the wind" (Dutton, Ashford, O'Neill, Hayes, & Wierba, 1997) and assessing colleagues' human and social capital. Our samples may have also induced range restriction in the human capital pathway since they consisted of professionals in a competitive program that restricts admission to those with proven success. However, our teams still align with teams in organizations that also aim to select "the best" job candidates and compete for internal resources. Future research that utilizes samples with greater variation in task skill or knowledge would likely offer additional insights regarding our model and the benefits of human and social capital to team

assembly, providing deeper understanding of the accumulation of potential resources for reputable and trusted individuals.

The boundaries of our study design point to conditions that may have influenced our proposed relationships. For example, although the lack of a formal leader or status differences may have created fertile opportunities for voice (Erez et al., 2002; Gerpott et al., 2019), these conditions may have also affected who was willing to speak up, how they chose to voice, and the probable outcomes of their behavior (Morrison, 2011). Structural factors might have also enhanced or inhibited the extent to which perceptions of team members are distributed across the broader network. For instance, organizations with hierarchical structures may limit interaction among members of different teams, preventing perceptions of quality work or friendship from spreading throughout the organization. In contrast, organizations with decentralized structures may allow for increased interaction among a wider range of employees (e.g., Chen & Huang, 2007). Finally, although the size of the teams in our sample were stable and consistent, variations in team size might uncover additional insights in our model (e.g., Nahapiet & Ghoshal, 1998). It may be that human capital is more relevant in smaller teams whereas social capital is more salient in larger teams that require higher levels of coordination and alignment among members to accomplish tasks. Examining these and other boundary conditions would be valuable future research endeavors.

Our focus on the positive aspects of challenging and supportive voice opens the door to consider the potential dark side of speaking up. It is possible that the benefits associated with one type of voice inhibit the positive outcomes associated with another type. For example, although challenging voice enhances perceptions of quality work, it also "rocks the boat" (Grant, 2013) and creates competitive pressures that disrupt team viability (Tost, Gino, & Larrick, 2012). Or, although others' support is critical to creative performance (e.g., Oldham & Cummings, 1996), supportive voice may cause teams to experience groupthink that stifles creativity (Janis, 1972). It may be valuable, therefore, to consider how voice configurations positively (or negatively) play out over time in teams. A latent profile analysis of voice might reveal that a team composed largely of supportive voicers is less effective because there are no "deviants" to drive human capital (Hackman, 2002). Alternatively, teams composed primarily of challenging voicers may find that effectiveness suffers due to minimal consensus creation. Thus, future research that examines the negative implications of voice might elicit potential dysfunctions in the team assembly process and reveal an insightful dark-side perspective to our theoretical model.

Finally, future research may consider examining components of human and social capital that were beyond the focus of our inquiry. Specifically, the social capital pathway in our model focused on trust due to its importance in interpersonal interactions with potential team members (e.g., McKnight et al., 1998; Meyerson et al., 1996), but other aspects of social capital are also worth investigating (e.g., Nahapiet & Ghoshal, 1998). For instance, supportive voice and the associated friendships that form may trigger a sense of shared norms or obligations that prospective team members find appealing. Similarly, shared identification with other work colleagues may provide invitations to join teams in which loyalty and commitment are valued. Although supportive voice may reinforce norms, enhance shared obligations, and lead to collective identification, future research could consider these dimensions separately from the variables in our social capital pathway to ascertain their distinct influence on team assembly.

Conclusion

Our work illuminates the dynamic nature of teams and the behaviors and perceptions that foster team assembly decisions. Although challenging voice signals human capital and enhances others' perceptions of one's quality work, the resulting personal reputation was insufficient to predict team assembly when considered alongside the social capital pathway. In contrast, we find that supportive voice signals social capital and has a positive indirect effect on trust in the broader network through friendship, and that trust, in turn, predicts team assembly. Combining these two pathways, those with multiplex ties—individuals viewed as high in human *and* social capital—are also highly sought when assembling teams. In sum, our work shows that within-team perceptions of one's human and social capital initiated by voice extend beyond team boundaries to affect broader perceptions and future team assembly in the larger work network.

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