

How Geographic and Social Distance affect Perceptions of Teams and their Members

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Building on construal level theory, this paper explores the effects of two different forms of distance on perceptions of distributed group members. In an experimental study, we find that perceptions of geographically and socially distant collaborators are more homogenous both within and across members. That is, individuals perceive less differentiation between the personality characteristics of each distant collaborator and less differentiation across a set of distant collaborators as well. In addition, geographic and social distance caused participants to view the team itself in more abstract terms. Beyond providing some of the first empirical support for extending construal level theory to distributed groups, this research examines the interactive effects of geographic and social distance. The results also have important practical implications for managing performance and managing impressions at a distance.

Keywords: Distributed Groups; Virtual Teams; Construal Level Theory

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Few processes affect our daily interactions more than how we perceive those we interact and work with. The impressions we hold of others fundamentally shape how we interpret their actions, and subsequently react to and feel about them. This makes how we perceive team members and teams critical to many of the interpersonal states and processes we study, such as trust, psychological safety, attribution, conflict management, knowledge-sharing, and team coordination. Whether it is assigning work, asking others for assistance, or deciding how much information to share, all such decisions are based on how we perceive others. For this reason it is not surprising that how people perceive others and form impressions about them has long been the subject of scholarly (Asch, 1946; Barnes Farrell, 2001; London, 2001) and popular (Carnegie, 1936; Gladwell, 2005) interest. In recent years, however, new work arrangements have made these perceptions substantially more complex.

Mediated communication, distributed work, and inter-organizational collaborations introduce different types of distance (e.g. technological, physical, organizational respectively), whose effects on how we perceive our colleagues remain far less well understood. Some have claimed that the central challenges identified in distributed work arise primarily from the increased difficulty of acquiring interpersonal knowledge about distant colleagues (Gabarro, 1979; Johri, 2012). This has resulted in models of interpersonal perception in distributed work based largely on access to information (Welbourne, 2001; Sproull & Kiesler), motivation to acquire information (Johri, 2012), use of technology (Carlson & George, 2004; Carlson & Zmud, 1999) or social categorization (Hinds and Mortensen, 2005, Fiol & O'Connor, 2005). As a result, understanding

how various forms of distance affect our perceptions is of increasing theoretical and practical interest given the role they play in shaping our collaborative relationships.

Recent work on construal level theory (CLT) (Wiesenfeld, Reyt, Brockner & Trope, 2017; Wilson, Crisp, Mortensen, 2013) suggests a more direct link between distance and perception without relying on the mediating role of information, technology, motives, or identification. Construal level theory (Trope & Liberman, 2003) seeks to explain the effect of distance on the abstractness of people's perceptions of objects, events or people. According to CLT, being psychologically distant from someone causes us to think of that individual in terms of their essential, general and prototypical features (high-level construal). This is in contrast to how we perceive psychologically proximate people – who we think of in terms of their incidental, specific and unique features (low-level construal). Distributed work arrangements often present an array of different forms of distance (geographic, social, temporal) that all produce psychological distance. To the extent we view geographically distant colleagues as psychologically distant, we will construe them at a higher, more abstract, level. Wilson et al. (2013) have applied CLT to distributed groups to predict that such high level construal makes it more difficult to differentiate both within and among distant team members, making attributions about collocated versus distant colleagues fundamentally different. These differences in judgments about fellow team members, then, have important implications for understanding group dynamics in geographically distributed collaborations.

This study extends construal level theory to test predictions about how we perceive individuals, multiple team members and the team as a whole based on geographic and social distance. In addition to extending CLT to a previously untested context, the results have practical

implications for both leaders of distributed groups and members of those groups who are interested in managing the impressions of their fellow team members and their boss(es).

Theoretical Background

Conceptualizations of distance in prior research. Traditionally much of the research on distributed groups conceived of distance in primarily objective and spatial terms (Griffith, Sawyer & Neale, 2003; Webster and Staples 2006; O'Leary & Cummings, 2007). In examining the treatment of dispersion in 150 different studies of distributed groups, O'Leary and Cummings (2007) concluded that “the overwhelming majority have focused on the spatial dimension of geographic dispersion” (p. 435). Gradually, though, other forms of distance have been acknowledged in the literature (Connaughton & Shuffler, 2007; Foster, Abbey, Callow, Zu & Wilbon, 2015; Meslec & Curseu, 2013). Amin and Cohendet (2004) discussed what they call “relational or social proximity,” and argued that it “involves much more than “being there” in terms of physical proximity.” Armstrong and Cole (2002) highlighted several dimensions of distance in their study of distributed development teams, including cultural differences, organizational distance (different departments and levels), degree of identification with the team and time differences. Watson-Manheim, Crowston and Chudoba (2002) elaborated on the idea of “discontinuities” to represent various boundaries (or distances) that are spanned in virtual work, including organizational membership, cultural background and time zones. O'Leary & Cummings (2007) explored other dimensions of dispersion, including configurational dynamics such as isolation and imbalance in teams. Various dimensions of distance (or “virtuality”) have received a great deal of attention in attempts to agree on a coherent categorization rubric (Bell & Kozlowski, 2002; Kirkman & Mathieu, 2005; O'Leary & Cummings, 2007; Gibson & Gibbs, 2006; Watson-

Manheim, Crowston & Chudoba (2002). And empirical studies are attempting to capture these dimensions as well (Hill & Bartol, 2016; Hoch & Kozlowski, 2014; O’Leary & Mortensen, 2010; O’Leary, Wilson & Metiu, 2014). Given an emerging consensus that distance encompasses more than geography, it is important to have a framework for understanding the effects of various forms of distance. One promising theoretical lens for integrating these different types of distance is through their effects on individuals’ level of construal.

Construal Level Theory. Construal level theory (CLT) asserts that people mentally model (construe) objects that are psychologically near to them in terms of the objects’ low-level, detailed, and contextualized features, whereas at a distance, they construe the same objects in terms of high-level, abstract and stable characteristics (Trope, Liberman & Wakslak, 2007). Such psychological distance, in turn, is frequently triggered by other forms of distance (physical, temporal, social, cultural). For example, when thinking about attending a conference a year in the future, we are inclined to think about the high level aspects of conference attendance, such as reasons why we might want to go (e.g., “I might learn something” or “it might provide me an opportunity to reconnect with colleagues”). However, when the conference is next week, we think about the low-level details of attending, such as logistics (e.g. “how will I get to the hotel from the airport” or “did I print my registration receipt”). In short, as psychological distance from a target increases, people rely on higher-level construals about that object (Trope et al., 2007).

Importantly, as construal level theory predicts effects on the basis of psychological distance, construal level theory suggests that all forms of distance that trigger psychological distance – such as the various forms of physical and structural distance outlined above – will similarly trigger high-level construal. In this way, construal level theory suggests that all of these forms of distance produce similar effects through the mechanism of psychological distance –

thereby providing a framework for organizing our understanding of the cognitive effects of these different manifestations of distance, discontinuity or dispersion. CLT suggests that different forms of distance between a person and a target create psychological distance toward that target; psychological distance leads to higher-level construals about the target; and high-level construals affect the way the target is perceived and acted upon. In distributed teams – in which various forms of distance (e.g. physical, temporal, cultural, technological, configurational, organizational) are typically present (O’Leary & Cummings, 2007) – such a process is particularly relevant (Wilson, Crisp & Mortensen, 2013).

In this study we focus on two of the most frequently mentioned dimensions of distance in the literature on distributed groups: geographic distance (O’Leary & Cummings, 2007) and identity or social distance (Hinds & Mortensen, 2005). Some form of geographic and social distance appears in all of the major frameworks of distance, discontinuities or dispersion (Bell & Kozlowski, 2002; Kirkman & Mathieu, 2005; O’Leary & Cummings, 2007; Gibson & Gibbs, 2006; Watson-Manheim, Crowston & Chudoba, 2002). In addition, similarity and proximity are often cited as critical for group entitativity (Abelson, Dasgupta, Park & Banaji, 1998).

Hypotheses

Intra-individual homogeneity in the perception of distant individuals.

Prior research on construal levels shows that individuals make higher-level construals about people at a different location than they do about those at their own location, even when the same amount of information is available about both. For example, in an experiment conducted by Fujita et al. (2006), student subjects watched a video of two students interacting in an empty classroom. The subjects were either told that the interaction involved NYU students who were in

the study abroad program in Italy (geographically distant condition) or at the NYU campus in New York (geographically proximal condition). When subjects were asked to describe what they saw in writing, they used more abstract language when they believed it was filmed at the distant location than when they believed it was filmed at the near location (even though the participants had seen the same video). Thus, perceived geographic distance led to higher-level construals.

This suggests that in the context of distributed teams, team members should make higher-level construals about distant colleagues than proximal ones. Like other sources of psychological distance, geographic distance increases focus on high-level information (central tendencies, general trends, abstract features and dispositional characteristics) and decreases attention paid to low-level information (incidental details, irregular outcomes, and situation-specific information). This tendency toward global perceptions at a distance suggests that perceptions of distant team members will be more abstract and general than perceptions of more proximal team members (which will tend to be more specific and varied). A team member's view of a collocated team member will be more rich and detailed than perceptions of a distant teammate, who will be perceived as more uni-dimensional (Wilson et al., 2013).

Similar arguments have been made for the role of social distance with respect to construal level. Construal level theory predicts the same pattern of effects with different forms of distance (spatial, temporal, cultural, linguistic, etc.). In this paper we explore the effects of social distance because these have important implications for team functioning (Lichtenstein, Alexander, McCarthy & Wells, 2004) and have been subject to different theoretical explanations for the same patterns. One important driver of social distance in team situations is organizational membership. Shared organization membership drives assessments of similarity and categorization into in-group versus outgroup perceptions (Rockmann, Pratt & Northcraft, 2007).

This leads to our first two hypotheses linking geographic and social distance to greater within-member homogeneity through construal level:

H1a: Individuals' perceptions of geographically distant others will be more intra-individually homogenous as compared to perceptions of geographically proximate others (even when the same information is available about distant and proximal others).

H1b: Individuals' perceptions of socially distant others will be more intra-individually homogenous as compared to perceptions of socially proximate others (even when the same information is available about distant and proximal others).

Interaction between geographic and social distance in the perception of distant individuals

Authors who consider multiple dimensions of distance (either theoretically or empirically) often discuss how one dimension of distance can affect another (Connaughton & Shuffler, 2007). For instance, Armstrong and Cole (2002) observed that “time differences amplified the effects of physical distance” (p. 171) in their study of distributed groups in a software engineering organization. They also noted that “time differences sometimes highlighted cultural differences,” (p. 171) making the cultural distances more salient. For instance, one group with team members in the US and Italy celebrated a project milestone on their weekly video conference. The East coast US members who logged on at 9:00am sent images of bagels and coffee. The Italian members, at 3:00pm their time, sent images of champagne. The geographic, temporal and cultural dimensions of distance represented in this team interacted to produce different representations of an appropriate team celebration.

When multiple dimensions of distance align, we expect nonlinear effects in groups. Thus, we predict that:

H1c: Individuals' perceptions will be the most intra-individually homogenous when distant others are both geographically and socially distant.

Inter-individual homogeneity in the perception of distant individuals

In addition to affecting individuals' ability to differentiate among the traits of a given distant individual, distance also affects individuals' ability to differentiate among multiple distant collaborators.

The propensity for global perceptions at a distance also affects views of between-person differences. In this case, team members are less likely to notice differences *between* colleagues in a distant location (differences that they would more readily detect between team members in their own location) (Wilson et al., 2013). When considering perceptions about multiple team members in distributed teams, then, construal level theory would predict that:

H2a: Individuals' perceptions of geographically distant others will be more inter-individually homogenous as compared perceptions of geographically proximate others (even when the same information is available about distant and proximal others).

Similar predictions can be made on the basis of social distance. In fact, scholars of social identity have examined an effect similar to the across-member homogeneity predicted by construal level theory—outgroup homogeneity. Social identity theorists argue that individuals categorize others as being either similar (in-group) or dissimilar (out-group) to themselves; the results are in-group favoritism and out-group homogeneity. The latter—outgroup homogeneity—is characterized by a tendency to see ingroups as having members that are more varied than outgroups (Ostrom & Sedikides 1992). Thus we would expect that:

H2b: Individuals' perceptions of socially distant others will be more inter-individually homogenous as compared perceptions of socially proximate others (even when the same information is available about distant and proximal others).

Similar to hypothesis 1c, we expect a reinforcing interaction between the effects of geographic and social distance on inter-individual homogeneity:

H2c: Individuals' perceptions will be the most inter-individually homogenous when distant others who are both geographically and socially distant.

Effects at the group level

In addition to affecting the way distant collaborators evaluate individuals, construal theory predicts that distance should affect perceptions of the team as a whole. Because perceptions of groups are distinct from perceptions of their members (Jourden & Heath, 1996; Abelson, Dasgupta, Park & Banaji, 1998), we set out to measure not only individual perceptions of distant team members but of the team as well. Sears (1983), for instance, showed how perceptions of groups were cognitively compartmentalized from perceptions of individual team members. Evaluations of individual politicians (or professors) were more positive than evaluations of the aggregated list of the same individuals, for instance.

In addition to theoretical and empirical reasons for separately testing the predicted effects at the group level, there are practical reasons as well. Leaders and facilitators often have to make judgments about groups as a whole – such as when they are diagnosing the functioning of a group, planning interventions in a group, or even deciding on group rewards or compensation. At the team level we expect that:

H3a: Geographic and social distance will cause participants think more abstractly about the team as a whole, not just its members.

Construal level theorists often discuss the effects of distance in terms of seeing the forest versus the trees (Dhar & Kim, 2007; Irmak, Wakslak & Trope, 2013). When applied to teams, this should mean that the closer a person is to the team the more likely they are to focus on individual members (trees) versus the team (forest) as a whole. Thus we predict that:

H3b: Participants who are geographically or socially close to the team will be more likely to refer to individual members when asked to describe what is happening in the team as a whole.

METHODS

Data collection approach

We chose to test these predictions in a controlled experiment because we needed to be sure that subjects in all conditions would have the exact same amount of information about the team and its members. This approach allows us to rule out other possible theoretical explanations for the predicted pattern of perceptions – such as that participants in one condition (typically the near condition) have more information about their fellow team members. Once the theoretical explanation has been established, the effect can then be tested in field situations.

Participants

Four hundred and eighty undergraduate students (278 females and 202 males, M age = 21.4 years, SD = 1.8) from a mid-size university volunteered for this study for course credit. Participants were randomly assigned to one of four conditions in a 2 X 2 design (geographic distance X social distance). Twelve percent of the participants were non-US residents. None of the participants identified a home country on the continent that represented the distant condition in this experiment. The majority of participants were business majors. Analyses of participants' open-ended responses to questions about the team as a whole were based on a sample of 465, due to 15 missing or illegible responses.

Task

Participants read a scenario that described a student project team composed of three members experiencing issues commonly associated with student project teams (including different expectations and unequal contributions). The scenarios were identical except for the location of

the project work (same vs. other location, representing geographic distance) and the university affiliation (same vs. different, representing social distance). In the resulting 2×2 experimental design, four experimental groups were tested: 1) participants evaluating a team comprised of students from their university engaged in a project on their local campus (same identity, local geography), 2) participants evaluating a team comprised of students from their university engaged in a project at a distant campus (same identity, distant geography), 3) participants evaluating a team comprised of students from a different university engaged in a project on the local campus (different identity, same geography), and 4) participants evaluating a team comprised of students from a different university engaged in a project at a distant campus (different identity, distant geography).

The description of the scenario and the details provided about each team member were developed and revised based on pilot testing for understanding and manipulation checks for geographic and social distance.

Procedures

Participants were told that the purpose of the experiment was to examine individual decision-making. Individual difference data were collected independently of the experiment through pre-screening questions. After reading the scenario, participants were first asked an open ended question (“How would you describe what is happening in this team?”). They were then asked to assess the personality characteristics of each of the team members in the scenario and respond to other questions about the team.

Measures

Two manipulation checks were included to ensure that participants understood the geographic and social distance manipulations. In addition, participants were asked how closely the

scenario matched their expectations of typical team behavior. Responses indicated that the scenario reflected typical team problems ($M = 3.72$, $SD = .94$).

After reading the scenario the participants were asked open ended questions about what was happening in the team, and their assessments of each of the members of the team. Participants rated each of the 3 members of the team on one item measures of Conscientiousness, Agreeableness, Openness, Extraversion and Emotional stability.

We used the Linguistic Categorization Model (LCM; Semin & Fiedler, 1988) to measure the level of abstractness in the participants' open-ended descriptions of what was happening in the team. The LCM has been used as a measure of construal level (Burgoon, Henderson & Markman, 2013; Reyt et al., 2016) as it classifies predicates along a continuum from concrete to abstract. In this case, it indicates how abstractly participants describe the team dynamics and how abstractly they mentally represent what is happening in the team. Two coders coded 20% of the transcripts at the outset of the coding and 10% at the midpoint of the coding to establish inter-rater reliability. Systematic disagreements between the coders were identified and corrected during training using pilot data questionnaires. Inter-rater reliability was calculated using Cohen's K (Cohen, 1960). Inter-rater reliability was .91 at the start and .94 at the midpoint for coding all predicate categories. Agreement levels above .60 are considered "substantial" (Landis & Koch, 1977). After coding, we calculated a weighted abstractness score based on the frequency of various predicates in each description of the team. To control for the length of each participant's description, we divided each weighted score by the number of coded predicates in the description. The resulting abstractness score is an ordinal measure that reflects the degree of abstraction in the description and ranges from 1 to 4 (Coenen, Hedeboew & Semin, 2006).

In addition to established measures of abstractness, we also coded how many times participants referred to members of the team they were evaluating by name. The frequency of names was standardized by the total number of predicates in each participant's description to control for the overall length of the description. This represents one indicator of individuation (Stivers, Enfield & Levinson; Coleman, Paternite & Sherman, 1999).

RESULTS

Means, standard deviations, and score ranges for the dependent variables are presented in Table 1.

Perception of intra-individual differences.

We tested whether participants were able perceive each team member as having distinct personality characteristics. 2 X 2 analyses of variance were conducted using perception of within-team-member differences as the dependent measure. Because the three distant team members in the scenario were undifferentiated with respect to roles, we averaged the variances in participants' perceptions of within-team-member personality differences across team members, and took the square root to get a combined standard deviation representing the extent to which participants could detect within-person personality differences (the extent to which they could tell the difference between team members' conscientiousness and openness, for example). We found main effects for geographic distance, $F(1, 476) = 29.75, p < .001, \eta^2 = .06$; social distance $F(1, 476) = 46.17, p < .001, \eta^2 = .09$; and the interaction between geographic and social distance $F(1, 476) = 9.46, p < .01, \eta^2 = .02$. Running the analyses without combining across the three team members in the scenario yielded a similar pattern of results and significances.

The interaction, shown in Figure 1, was consistent with the patterns seen in the main effects. When evaluating a local team, the ability to detect within person differences was greater

for team members who shared the same school identity ($M=1.04$) than for team members with a different identity ($M=.84$). Likewise, when evaluating a geographically distant team, the ability to detect within person differences was greater for team members who shared the same school identity ($M=.86$) than for team members with a different identity ($M=.78$), on average, though the relative difference was more pronounced for team members who shared the same identity with the evaluator.

Perception of inter-individual differences.

We also tested whether participants would be able to detect differences in personalities between team members. 2 X 2 analyses of variance were conducted using perception of between-team-member differences as the dependent measure.

Because patterns in distinguishing between team members were similar across each of the big 5 traits tested, we averaged the variances in participants' perceptions of between-team-member personality differences across traits, and took the square root to get a combined standard deviation representing the extent to which participants could detect personality differences between team members (the extent to which they could tell the difference between team members 1, 2 and 3 on conscientiousness, for example). We found main effects for distance, $F(1, 476) = 20.61, p < .001, \eta^2 = .04$; identity $F(1, 476) = 59.34, p < .001, \eta^2 = .11$; and the interaction between distance and identity $F(1, 476) = 2.87, p < .10, \eta^2 = .01$

The interaction, shown in Figure 2, was consistent with the patterns seen in the main effects. When evaluating a local team, the ability to detect between person differences was greater for team members who shared the same school identity ($M=1.15$) than for team members with a different identity ($M=.95$). Likewise, when evaluating a distant team, the ability to detect between

person differences was greater for team members who shared the same school identity ($M=1.02$) than for team members with a different identity ($M=.89$), on average, though the relative difference was more pronounced for team members who shared the same identity with the evaluator. The pattern of effects was the same when examining each of the personality variables separately.

Content analysis

Abstract thinking about the team. In addition to testing perceptions of team members, we examined how abstractly participants thought about what was happening in the team. This provides a test of whether geographic and social distance affected how participants view and evaluate the team as a whole. A 2 X 2 analysis of variance on the abstractness score from their written description of the team yielded a main effect for social distance $F(1, 461) = 87.74, p < .001, \eta^2 = .16$; a main effect for geographic distance $F(1, 461) = 26.25, p < .001, \eta^2 = .05$; but not a significant interaction effect $F(1, 461) = .86, p = ns, \eta^2 = .00$. Participants who described the team dynamics in the geographically distant location used significantly more abstract language than those who described the team in the geographically near location. Participants who described the team dynamics of a team from their own university (same identity) used much more concrete language than those who described the team from a different university (different identity). These results suggest that people think differently about teams, their members and their dynamics based on geography and identity.

The participants' assessments of the team in the Far-Different Identity condition are general and could apply to almost any student team:

The team is not gelling. They are all on different pages and are not airing out their issues which in turn is leading to poor deliverables. (Far, Different identity)

They seem disorganized and there seems to be a lack of communication (Far, Different identity)

Whereas the assessments of the team in the Local-Same Identity condition are much more specific:

This team is not communicating efficiently. Chandra may be too relaxed and completing her part last minute. Jim may be focusing too much on little details causing his portion to be late. Anne is right that the split-up-the-assignment approach was not the way to go. The team was supposed to meet once a week, and email is only a moderate communication channel. It takes out emotions, debating, feelings and tones that a group that meets in person would discover. They need to start meeting once a week and stick to their timed schedule. Maybe assigning days for rough draft completions, editing and due date. (Local, Same identity)

This team is not working well together and therefore are behind on deadlines. They communicate mostly through email, but only to turn in their part of the assignment. Through their individual accounts, it is obvious that there is a problem and the members need to talk about this in person. Each idea has merit. Anne is right in that having meetings in person would increase communication and then everyone could work on their part and meet again to wrap it up. Jim is right to want a more cohesive final product, and meeting together at the end would help with that. Chandra too has a point, panicking or over-reacting is pointless and the team is not failing, they could just do better. (Local, Same identity)

Although the assessments of the team in the Local and Same Identity conditions tended to be longer and more detailed, this did not affect the abstractness score which was standardized based on the number of coded predicates in the description.

Use of personal names. We also tested whether participants were more likely to think about the team members as distinct individuals, as measured by their use of the team members' personal names in their description of the team situation. A 2 X 2 analysis of variance on the number of times team members' personal names were mentioned (standardized by the length of the written description) yielded a main effect for identity $F(1, 461) = 5.40, p < .05, \eta^2 = .01$; a main effect for geography $F(1, 461) = 13.40, p < .001, \eta^2 = .03$; and an interaction effect $F(1, 461) = 5.62, p < .05, \eta^2 = .01$. The effect of identity depended on geography. The effect of geography on use of personal names was much stronger when participants shared an identity with

the team members, as shown in Figure 3. They were much more likely to use personal names in describing team events when they shared both an identity and a local geography with team members in the scenario.

Most of the descriptions of the team in the Local-Same Identity condition treat the team members as distinct individuals, as can be seen in the following descriptions of what is happening in the team:

The team is in disagreement about how to handle their group dynamics moving forward. Jim would rather just divide up the work and individually whereas Anne would prefer to meet up regularly and work through the project together. Chandra doesn't really seem to think that there is anything wrong with the current group dynamics. Both Anne and Jim recognize that changes need to be made in the group but they have a difference of opinion on how they would like the team to move forward from here. I think the group has exited the "forming" stage and is now in the "storming" stage. The team has so far ignored the advisors recommendation of meeting once a week to discuss the project and has chosen to handle everything digitally. (Local, Same identity)

The team has different ideas about what they want from this project, which is one of the reasons they are not doing as well as they would like. Anne actually wants to learn and help the art gallery succeed, which is why she's more focused on group collaboration to find the best possible solution. Jim is focused most on getting a good grade, so he doesn't really want to bounce around ideas. All Jim wants to do is get everything done in the best and easiest way possible to get the best grade. Chandra seems more laid back, especially because he has so much experience in art galleries already. This may lead to his confidence that the project will all work itself out. However, the other group members seem more concerned about the current grades than Chandra is, which could be causing conflict. (Local, Same identity)

When participants were told they were evaluating a local team composed of members from their own university, they saw individual differences in motivations, behavior and how those individual differences were contributing to the team dynamics. Whereas when participants were

assessing a distant team composed of individuals from a different university, the descriptions were more focused on the whole, rather than the individuals and their part in the whole:

The team is a diverse group which can be good, but they are all on a different pages. They didn't spend enough time setting the ground rules initially, so consequently, they do not feel comfortable addressing the problems. (Far, Different identity)

The team is failing to communicate on what they feel the problems are with the current group dynamic. They also have not identified the strengths and interests of each of the group members and planned the work in a way that maximizes each of the individuals' strengths. By not meeting in person, they eliminate lots of potential for group discussion, constructive criticism, and quality control of their project. (Far, Different identity)

Together, the results of the open-ended and forced-choice analyses provide convergent evidence for construal level theoretical predictions about team member perceptions at a distance.

DISCUSSION

The results of this study support construal level predictions about perceptions of close and distant team members. Participants tended to see distant team members as uni-dimensional (globally good or globally bad), whereas they had more nuanced views of close team members (who could be positive on one personality dimension, but negative on another). In addition, participants had a more difficult time distinguishing between distant team members (“they all seem the same to me”). These results stand in contrast to the predictions of cues filtered out views of distributed work (Sproull & Kiesler, 1986), which relies on reduced cues or reduced information to explain similar effects. In this research, the cues and information were the same across conditions. Yet even with the same information about team members, distance (geographic and/or social) resulted in different perceptions of team members.

The CLT predictions integrate theories of impression formation which have generally either adopted a gestalt approach (assuming people form holistic impressions of others; Asch, 1946) or a piecemeal view of impression formation (assuming people process isolated features; Anderson, 1981). Fiske and Neuberg (1990) proposed a model where people do both – forming holistic as well as individuated impressions depending on the extent to which they use a target’s particular attributes. Individuated and complex impressions are thought to be more valuable than categorical and simple impressions since they allow perceivers to use the impressions more judiciously based on the situation (Johri, 2012). Construal level theory offers an explanation about how both processes (holistic and individuated impressions) are affected by distance.

Interestingly, the pattern of results observed in this study is not exactly the same as what has been observed with halo errors (when overall impressions strongly influence evaluations of specific attributes (Cooper, 1981). Studies of halo error have generally shown that this bias makes it more difficult to distinguish an individual’s strengths from their weaknesses, but makes it easier to distinguish between ratees (Murphy, Jako & Anhalt, 1993). This study showed that distance (either geographic or social) made it more difficult to discern specific attributes *and* more difficult to distinguish between people. This suggests that the mechanism which produced the pattern of results in this study (psychological distance) is different from the mechanism that results in halo effects.

Practical Implications

This study found that with geographic and social distance people were less likely to perceive differences between team members or to distinguish the nuances of a team member’s personality. In practice this means that team leaders will systematically evaluate near subordinates differently from subordinates working at a distance. Team leaders would be more likely to see

distinct strengths and weaknesses of socially- or geographically- near members of their teams. These more fine-grained perceptions might lead to more useful feedback for those near members. This finding adds another consideration to the career calculations of employees who are evaluating whether working at a distance might harm their career prospects (Elsbach, Cable & Sherman, 2010).

For team members themselves, complex individuated impressions may enable more optimal choices of messages in interactions, lowering the chances of offending or confusing someone (Jussim, 1993; Berger & Bradac, 1982); reducing communication breakdowns and facilitating collaboration. Reducing stereotyping and bias allows distributed team members to understand others' perspectives – a crucial element of distance collaboration (Krauss & Fussell, 1991). Expertise coordination and a team's transactive memory system (knowing who is good at what) would likely also be improved by the more fine-grained perceptions of team members' individual differences that come with lower levels of distance.

Even if employees can't change their physical distance from key evaluators, they can increase the likelihood that their team members and leaders will develop more differentiated impressions of their personality and performance by reducing social distance (emphasizing similarities; increasing others' familiarity, highlighting shared identities [for instance, a shared identity as parents]).

To the extent that trust formation and other group processes depend on individuated impressions of team members, it would be helpful for teams to reduce the geographic or social distance between members. When members of teams feel less visible or identifiable, they may feel more free to engage in anti-normative behaviors (Taylor, O'Neal, Langley & Butcher, 1991; Zimbardo, 1970). Intuitive understanding of this effect may be behind the oft-cited calls for

bringing virtual team members together face-to-face in order to help the team develop trust (Lipnack & Stamps, 1997).

On the other hand, social or geographic distance could confer other advantages in perception – particularly in those cases where global assessments might be helpful. If you wanted a facilitator to identify overall patterns of team functioning it would be better to select someone with some social or geographic distance from the team. This may be why consultants are assumed to be able to see patterns where the members of the organization cannot; in effect to be able to see the forest for the trees (Barrington, 2011). In this way, there may be a kernel of truth to the joke that a consultant is someone from at least 50 miles away (Weiss, 1995).

Methodological Implications

The results of this study also raise some interesting methodological implications for measurement in studies of distributed teams. When measuring perceptions in distributed teams, it appears that the factor structure of perceptions of proximal others will be more differentiated than the factor structure of perceptions of more distant others (even when the available information about distant others equals the information about proximal others). If this is true, research comparing the perceptions of near and distant respondents may have been violating assumptions of measurement invariance (or measurement equivalence). Since the establishment of measurement invariance across groups is a prerequisite to conducting substantive cross-group comparisons (e.g., tests of group mean differences or other structural parameters; Schmitt & Kuljanin 2008; Vandenberg & Lance 2000), this finding has the potential to call into question existing findings comparing collocated and dispersed teams, for instance.

Limitations and Future Research

This laboratory experiment sacrificed generalizability to control for alternative theoretical explanations for the predicted pattern of results (especially access to different information). In real teams, members typically have more specific knowledge about team members who are physically or socially close. We might expect that team members would have more opportunities to acquire information about others who are close, and thus to have more detailed views of those team members' personalities. Use of a scenario study allowed us to control for these alternative explanations.

One criticism of scenario studies is that the level of participant involvement in the situation is limited. This might have reduced participants' responsiveness to the manipulations. In real teams, participants' reactions to distance might be stronger. Participants also read about the team rather than being a part of the team. This perspective is closer to the experience of a team manager than a team member, and the results would need to be tested with team members' evaluations of their own teams. Real teams also offer additional dimensions of distance (for example, temporal, status, and cultural distances) that we were unable to test in the context of this one study.

This research raises questions about the effects of distance on the development of perceptions in teams over time. There is some evidence that having individuated impressions early in the life of a team leads to better relational outcomes than developing a more fine-grained view of fellow team members later in the life of the team. Walther, Slovacek and Tidwell (2001), for instance, found that introducing individuating information (such as pictures of team members) later in the life cycle of international teams caused members to report lower levels of affiliation and liking. It would be interesting to examine how changes in distance (and concomitant construal levels) at different points in a team's development affect not only the perceptions of team members but team level outcomes like trust and conflict.

Finally, the results of this study suggest that researchers who study and compare distributed groups should, at a minimum, test for measurement invariance across these groups. In order to meaningfully compare the responses of near team members and distant team members, researchers should establish that their indicators are measurement invariant. They can do this using multidimensional scaling, principal component analysis exploratory factor analysis or confirmatory factor analysis to ensure the loadings for items on each factor they are measuring are equivalent across near respondents and distant respondents. It is also possible to test for measurement invariance across groups in longitudinal data (Kim & Willson, 2014).

Conclusion

This research extends construal level theory to teams and provides support for one theoretical explanation for patterns of team perceptions. It also showed how two forms of distance (geographic and social) interact to affect impressions in distributed groups. As organizations continue to form teams across a number of dimensions of distance (geographic, social, temporal and cultural), it is increasingly important to understand how the effects of multiple forms of distance interact to affect team members' perceptions.

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Table 1

Effects of Distance on Team Member Perceptions, Abstractness and Use of Personal Names

	Distance				Minimum score	Maximum Score
	Local team		Distant team			
	Same identity	Different identity	Same identity	Different identity		
	M (SD)	M (SD)	M (SD)	M (SD)		
Within-person variance	1.04 (.20)	.84 (.21)	.86 (.26)	.78 (.23)	0	1.72
Between person variance	1.15 (.21)	.95 (.24)	1.02 (.24)	.89 (.25)	.37	1.82
Abstractness	2.60 (.51)	2.96 (.32)	2.81 (.33)	3.11 (.32)	1.0	4.0
Individuation (personal names)	.10 (.01)	.06 (.11)	.05 (.08)	.05 (.06)	0	1.0

Figure 1. Interaction between geographic and social distance on perceptions of within-person differences.

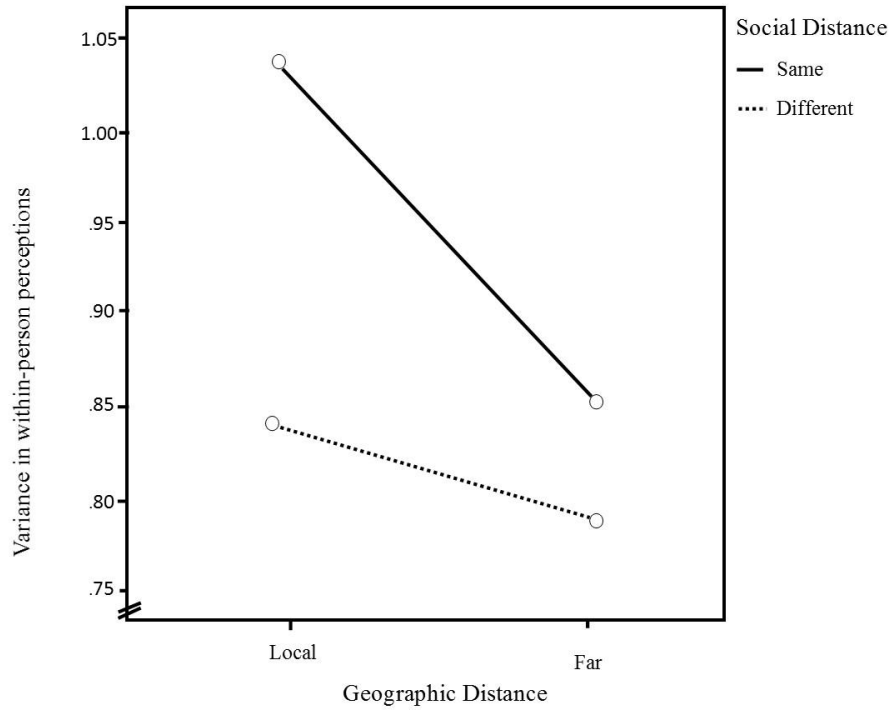


Figure 2. Interaction between geographic and social distance on perceptions of between-person differences.

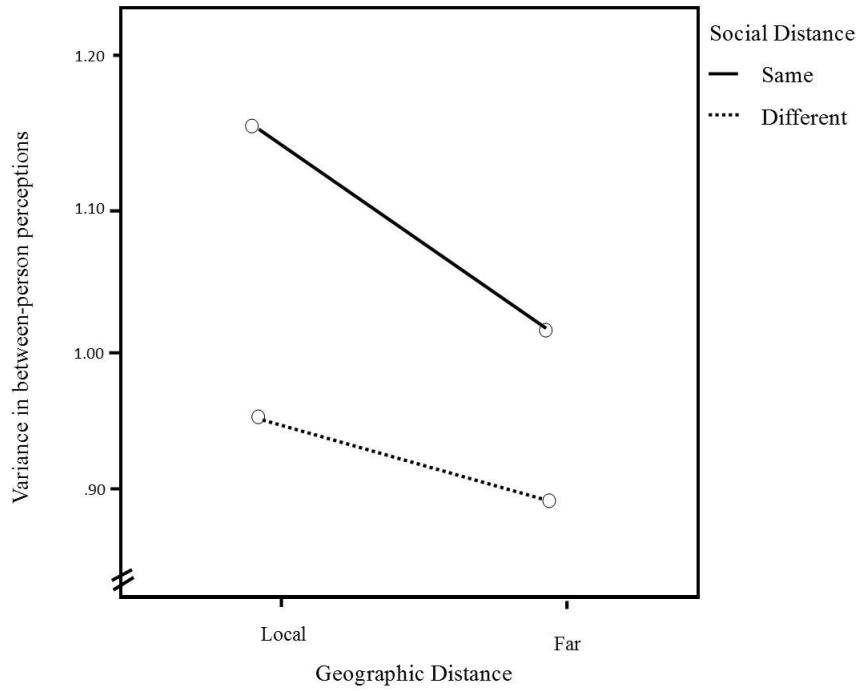


Figure 3. Interaction between geographic and social distance on use of personal names.

