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Extending Construal Level Theory to Distributed Teams: Perception and Evaluation of Distant Others

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**EXTENDING CONSTRUAL LEVEL THEORY TO DISTRIBUTED TEAMS:
PERCEPTION AND EVALUATION OF DISTANT OTHERS**

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Abstract

Building on prior research on distributed teams that has identified physical and temporal distance as impediments to collaboration and relationship development, this paper explores how and why we treat geographically distant others differently from those who are proximal. According to construal level theory, physically- or temporally-distant events or objects are more psychologically distant and are more likely to be described in terms of their more general characteristics, while views of more proximal events or objects will be more detailed and nuanced. We extend construal level theory to the distributed team context by advancing propositions about how group members perceive and evaluate distant others in contrast to proximal others. By comparing to alternative computer-mediated communication and social psychological theories that have been applied to this phenomenon, we show that construal level theory offers parsimonious explanations as well as novel predictions about how and why we perceive and evaluate distant others differently. The paper then considers theoretical, methodological, and practical implications of construal level theory for distributed teams and other virtual settings.

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Do we think about distant and collocated colleagues differently? This question underlies much of the practical literature on virtual work (Mayor 2001; Nickson & Siddons 2004; Wolgemuth 2008). Articles about telecommuting are full of advice about how remote workers can remain top-of-mind with their boss and co-workers (HR Focus 2002), and advice for virtual teams frequently stresses the need for face-to-face meetings so that members can get acquainted and start on an equal footing (Duarte & Snyder 2006). There is also considerable support for the idea that we view others differently at a distance in both qualitative accounts of distributed teams (Baba, Gluesing, Ratner & Wagner 2004; Cramton 2001) and quantitative analyses of distributed and collocated workers (Allen 1977; Festinger 1951; Hancock & Dunham 2001; Kiesler & Cummings 2002; Olson & Olson 2000). All of this evidence suggests that distance changes our perceptions of others – but why?

The literature on distributed teams has suggested several mechanisms that promote perceptual distinctions between distant and proximal peers. For example, members may engage in social categorization and identification (Hogg & Terry 2000) based on geographic differences, such as when team members in one office view those in another office as the “out-group.” This labeling affects both perceptions of and interactions with those distant colleagues, and its impact may be intensified by temporal, demographic, cultural, organizational, and professional differences that are often confounded with the geographic configuration of group members (Cramton & Hinds 2005; Polzer, Crisp, Jarvenpaa & Kim 2006; O’Leary & Mortensen, forthcoming). In addition, members who rely heavily on computer-mediated communication may make assessments and attributions based on restricted social or contextual information (Daft & Lengel 1984; Sproull & Kiesler 1986). For example, the lack of knowledge of the distant context or access to situational explanations for distant colleagues’ behavior makes team members more likely to rely on dispositional accounts for their distant colleagues’ behavior (Cramton, Orvis & Wilson 2007). For the most part, these theories have

been used to explain more positive affect toward proximal group members than distant ones (e.g., Cramton 2001; Walther 1992).

Although these theories provide insights into the perception and evaluation of geographically-distant others in distributed teams, we suggest such effects are driven by a fundamental cognitive difference in how individuals view distant and proximal stimuli of any sort (including people). Construal level theory proposes that individuals mentally construe events, objects or people that are psychologically near in terms of low-level, detailed and contextualized features, whereas they construe distant events, objects or people in terms of high-level, abstract and stable characteristics (Liberman & Trope 1998; Trope, Liberman & Wakslak 2007). In this paper, we extend construal level theory to parsimoniously explain phenomena observed in prior research on distributed teams. We show how this single theory can account for disparate observations and allow us to predict effects that have not been systematically anticipated.

In the following sections, we review prior research and theory on construal level theory; offer predictions about the perception and evaluation of geographically-distant others in the context of distributed teams; discuss alternative explanations to these predictions; and examine the theoretical, methodological, and practical implications of construal level theory for the distributed team context.

Construal Level Theory

Construal level theory explains the connection between distance and levels of abstraction that people make in everyday cognition, such as perception of a distant event or evaluation of a new product (Trope et al. 2007). In their original formulation, Liberman and Trope (1998) created and tested a theory of temporal construal in which distant future situations are construed at a higher level (using more abstract and central features) than near future situations. For example, in one of their studies, participants were asked, in an open-ended format, to describe “moving into a new apartment” in either the near (tomorrow) or distant (next year) future. Participants in the distant future condition were more likely to describe the move in high-level (why) terms (e.g., “starting a new life”), whereas participants in the near future condition were more likely to describe it in low-level (how) terms (e.g.,

“packing and carrying boxes”). Although temporal distance of an event remains the focus of much of the research on construal levels, construal level theory has been extended to other dimensions of distance (e.g., spatial distance) and to other objects, including people (Fielder 2007; Fujita, Henderson, Trope & Liberman 2006; Henderson, Fujita, Trope & Liberman 2006; Trope et al. 2007). Next, we describe what happens when individuals construe objects at different levels of abstraction and how psychological distance contributes to these construal levels.

Construal Levels

Central to construal level theory is the argument that the greater a person’s distance from any object (e.g., person, event, physical thing), the more likely that object is to be represented (i.e., construed) in terms of a few general features that convey its essence. The closer a person is to an object, the more likely the person is to attend to its contextual and incidental aspects. High-level construals reflect the core features of an object (Kivetz & Tyler 2007); they are “abstract, schematic decontextualized representations that extract the gist from the available information” (Liberman & Trope 2008: p.1202). For example, construals can represent people using relatively abstract personality traits (e.g., “Bob is outgoing”) or more concrete action terms (e.g., “Bob met everyone at the party”). Because traits reflect enduring and relatively stable characteristics of a person, they constitute a higher-level construal. (See Table 1 for a summary of the conceptualization of high- and low-level construals as well as effects found in prior construal level research).

Insert Table 1 about here

Construal at a given level, in turn, affects mental representation, prediction and evaluation (Trope et al. 2007). In mental representation, construal levels determine if observations focus more on “the forest” than “the trees” (Smith & Trope 2006; Wakslak, Trope, Liberman & Alony 2006) and if objects will be categorized in fewer, broad groups rather than more, narrow groups (Liberman, Sagistrano & Trope 2002). Construal levels lead to interpretations of actions that focus more on *why*

an action is performed than *how* (Fujita et al. 2006; Liberman & Trope 1998) and to inferences about behavior that are dispositional rather than situational (Henderson et al. 2006; Nussbaum, Trope & Liberman 2003). Construal levels also influence the extent to which predictions focus on global trends rather than local exceptions (Henderson et al. 2006) and evaluations consider central, goal-related issues rather than peripheral issues (Trope & Liberman 2000). According to construal level theory, these effects are driven by the connection individuals make between levels of abstraction and distance, specifically psychological distance (Trope et al. 2007).

Psychological Distance

An object is psychologically distant when it is not part of one's direct physical experience and therefore has to be construed (Liberman, Trope & Stephan 2007). For example, attending next year's conference (a temporally-distant event) cannot be directly perceived, but it may be imagined. Likewise, the experiences of someone in another social group (a socially-distant stimulus) cannot be directly experienced but must be construed. So, as distance (be it temporal, spatial or social) from an object increases, people rely on higher-level construals about that object (Trope et al. 2007).

Although construal level theory does not explicitly address the adaptive, functional aspects of psychological distance, construal theorists have speculated that construal patterns may have evolved from our typical knowledge about low- and high-level features of objects (Liviatan, Trope & Liberman 2008). Typically, details about the concrete, secondary features of distant objects are either unavailable or unreliable. As a result, we are forced to form a higher-level construal of distant objects compared to more proximal ones. Thus, an association or habit is established between psychological distance and high-level construal. This association may then be over-generalized, leading people to use a high-level processing orientation for distant objects and a low-level processing orientation for proximal objects, even in situations where they have the same knowledge about the distant and proximal objects (Trope et al. 2007). This connection has been argued to be bi-directional, such that high-level construals, in turn, increase psychological distance (Trope et al. 2007).

In summary, construal level theory suggests that: various forms of distance between a person and an object create psychological distance toward that object; psychological distance leads to higher-level construals about the object; and high-level construals have effects on the way the object is perceived and evaluated. In the next section, we draw upon theory and empirical findings about construal levels to theorize specifically about how geographic distance shapes perceptions and evaluations of peers in distributed teams.

Extending Construal Level Theory to Distributed Teams

Like all teams, distributed teams are composed of a bounded set of members interdependently working together toward a common goal (Arrow & McGrath 1995; Cohen & Bailey 1997). In addition to these common characteristics, the unique feature of distributed teams is that geographic distance separates at least some of the members, typically leading them to rely heavily on information technologies to communicate (Bell & Kozlowski 2002; Cummings 2004). Interestingly, although increased reliance on distributed teams has led to a growing body of work examining their dynamics, geographic distance itself and its effects have often been neglected in both the empirical research and theorizing about these teams (e.g., Hinds & Bailey 2003; O’Leary & Cummings 2007). As a result, construal level theory can substantially enrich our understanding of the effects of distance in these teams.

Distributed teams also provide an interesting context in which to explore construal level theory because they often embody multiple dimensions of distance. Members of distributed teams are separated by varying degrees of spatial distance, temporal distance, configurational distance and social distance (O’Leary & Cummings 2007). Thus, distributed teams provide a unique context in which to examine the interaction of multiple dimensions of distance – an issue about which construal theorists have, to date, only speculated (Trope et al. 2007). In addition, the distributed team context suggests new dimensions of distance to consider, such as the configuration of members at different locations (e.g., 4-1-1 versus 2-2-2) and the temporal dispersion of members (e.g., the extent to which team members’ normal work hours overlap). Theoretically, isolation or the inability to communicate

with other members in real time may add to perceptions of distance (O’Leary & Cummings 2007; O’Leary & Mortensen, forthcoming) and affect evaluations of distant others. However, the literature on construal level theory has not yet addressed these aspects of distance, which are unique to the group level of analysis.

In the propositions that follow, we build on the logic of construal level theory to make predictions about the effects of geographic distance on perceptions and evaluations in distributed teams. We focus on the distance between team members that occurs when members work at different geographic locations, which by definition, occurs in all distributed teams and is, in many cases, the most salient difference between team members (Campbell 1958; Polzer et al. 2006). Collocated team members are perceived to be more “near” or “proximal” than team members at different locations, who are perceived to be more “distant.” This geographic distance creates psychological distance, resulting in higher-level construals that alter perceptions and evaluations of team members. Further complicating this relationship are other parallel dimensions of distance (e.g., temporal, cultural, linguistic) that often coincide with, or arise from, physical separation among team members. Although we recognize that these various forms of physical and temporal distance are capable of creating or altering psychological distance between distant team members, we demonstrate the usefulness of extending construal level theory to distributed teams by offering propositions about the construal of distant team members (in contrast to collocated members) and how those construals differ over time.

Construal of Geographically-Distant Team Members

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.

In the context of distributed teams, we expect team members to 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). So, for example, collocated team members might develop highly nuanced views about who in their office could be trusted under what circumstances, but they are less likely to have such fine-grained views of geographically-distant others. This suggests that 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 unidimensional. In fact, this tendency has been observed in qualitative accounts of global teams. In one report of a globally distributed customer-supplier team, it was apparent that the French members of the team had relatively monolithic views of the distant American team members – viewing them simply as “remote.” It was not until a crisis experience brought the team closer together that the members developed more nuanced views of each other. As an example, the French members of the team were able to see the American director as more than a task-oriented drone. Indeed they were able to warmly joke with her about her passion for food (Baba, Gluesing, Ratner & Wagner 2004). Because both experimental and qualitative studies of perception at a distance suggest that distant others will be seen as more one-dimensional, we predict that:

Proposition 1: There will be less variance in perceptions of within-person characteristics for geographically distant others than proximal others (even when the same information is available about distant and proximal others).

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). Again, this effect has been observed in detailed case analyses of international project teams (Cramton 2001). In one of these teams a Canadian team member was the second person to check in with the team. She explained that her collocated teammate was away for a few days. As a result of technical problems her email did not reach one of the other members of the team. The rest of the team complained that the Canadians had not been heard from and their perception of Canadian tardiness persisted to the end of the project (in spite of the fact that one of the Canadians had been among the most prompt of all team members). Cramton (2001) concluded that “there may be a tendency to generalize social perceptions, particularly negative ones, to the locational subgroup of which a person is a member” (p.363). For these reasons we predict that:

Proposition 2: There will be less variance in perceptions of between-person characteristics within a given geographic subgroup, when that subgroup is distant rather than proximal (even when the same information is available about distant and proximal others).

Another effect of information processing at a distance is the tendency to ignore situational constraints in favor of dispositional ones. According to construal level theory, the more distance (geographic, social, temporal) there is between people, the more likely they should be to interpret each others’ actions as determined by superordinate, primary characteristics. Nussbaum, Trope and Liberman (2003) showed, in a series of 4 experiments, that people are more likely to use high level construals for others’ distant behavior – at least temporally distant behavior. In one study, participants disregarded the influence of situational constraints when predicting the distant future behavior of another, but not when predicting their near-term behavior. Another study allowed

participants to ask questions of another person in order to predict their behavior in the future. Consistent with construal level theory, participants asked more questions about the target's decontextualized dispositions when trying to predict their distant future behavior. So when attempting to predict distant behavior, participants asked their partners questions like, "Are you an optimist or a pessimist?" When attempting to predict near term behavior, they asked their partners situational questions like, "Are you hard working *when it comes to studying?*"

This tendency to focus on traits at a distance was also demonstrated in a series of experiments by Henderson, Fujita, Trope and Liberman (2006). In their experiments, students were more likely to consider situational constraints when evaluating the behavior of a geographically proximal student than one who was geographically distant, even when exactly the same information was available about the near and distant student. Situational constraints, *even when perceived*, were not considered when drawing inferences about distant behavior, which is a departure from attribution models (which suggest that the availability of situational explanations will increase situational attributions; Gilbert & Malone 1995). Applied to distributed teams, this evidence suggests that:

Proposition 3: Behavior at a distance is more likely to be perceived as reflecting underlying traits than the same behavior exhibited by more proximal others.

As such, construal level theory provides an alternate explanation for why distributed team members are more inclined to make person-based attributions about their fellow team members (Cramton, 2001; Cramton et al. 2007).

Construal of Geographically-Distant Team Members over Time

At a distance, trends and patterns are also identified more readily and expected to persist more than the same patterns in more proximal behavior or events. Nussbaum, Trope and Liberman (2003) showed that participants expected others to behave more consistently across distant future situations than in near term situations. For instance, they expected their friends to behave in a more consistently agreeable manner one month in the future versus one day in the future. The expectation of consistent behavior in the distant future reflects a high-level construal because abstract traits refer

to relatively invariant properties of people; properties that should be manifested consistently across different situations.

In a related experiment, Henderson, Fujita, Trope and Liberman (2006) showed that students were more likely to predict that distant others (NYU students visiting a campus in Italy) would behave in a prototypical fashion than more proximal others (NYU students at the New York campus). When information was provided about the central tendency of an event (average number of hours of sleep per night), their predictions about geographically distant behavior were more affected by whether the behavior resembled the central tendency of the category. Values that are representative of a distribution (those that are close to the mean) constitute a high-level construal of the distribution. In the final experiment in this series, participants were asked to use graphs of trends to predict students' attitudes and behavior. Each graph showed a general trend (e.g., declining average number of hours of sleep) with a deviation in the most recent year (e.g., an increase in the last year). Participants were then asked to predict near and distant behavior. Would it be consistent with the general trend or with the case that deviated from the trend? When predicting the behavior of distant others, the participants were more likely to rely on the general trend, and when predicting the behavior of proximal others they were more likely to focus on the exception.

Similar effects have been observed in geographically distributed teams, although there has not always been an overarching theoretical explanation for the patterns. In her study of global project teams, Cramton (2001) described this pattern in a team in which one of the members in Virginia (Paul) accidentally omitted the e-mail address of one of the members in Texas (Don). As a result, when Don sent emails to the team, his ideas did not address suggestions that Paul had made (since Don had not received Paul's emails). Even though the problem was eventually corrected and Paul understood that Don could not have acknowledged ideas he never received, Paul never updated his view of Don. At the end of the project Paul still presented the problem as a power struggle between Don and himself. Cramton (2001) noted that "impressions that had formed tended to persist." (p. 359). Generalizing these observations to distributed teams, we expect that:

Proposition 4: Once established, perceptions of geographically distant others will be more stable than perceptions of more proximal others.

The abstract information processing that occurs with distance is also associated with a greater ability to extract the “gist” of a situation – that is, to disregard peripheral features and see underlying patterns (Trope et al. 2007). Indeed, Wakslak, Trope, Liberman and Alony (2006) showed that with increased psychological distance, participants were better able to detect patterns when presented with “noisy” data. Psychological distance enabled the participants to see the forest for the trees, leading them to perform better on the Snowy Pictures Test (which asks participants to name a picture hidden beneath visual noise) and the Gestalt Completion Test (in which participants must name an object presented in fragments). Subjects were better able to see the underlying patterns in the dots and word fragments when psychologically distant than when proximate, suggesting they were able to ignore potentially distracting peripheral information. Applied to people in distributed teams, we would expect that:

Proposition 5: Patterns or trends in behavior or performance will be perceived more readily in geographically distant others than more proximal others.

Taken together, these predictions suggest that, given the same information about the geographically distant partners, distributed team members are more likely to solidify early impressions and that those impressions are likely to be stickier (i.e., more resistant to change). Interestingly, there are indications in the literature on distributed teams that impressions are difficult to change at a distance (Kanawattanachai & Yoo 2007; Walther, Slovacek & Tidwell 2001), but researchers have not yet provided theoretical reasons for what they have observed.

The propositions we have outlined above represent a non-exhaustive sample of the predictions resulting from the extension of construal level theory to the context of distributed teams. We highlight other possibilities in a subsequent section on future research. We now consider how construal-based predictions relate to rival theoretical explanations.

Comparing Construal Level Theory to Prior Research on Distributed Teams

While the predictions outlined in the previous section illustrate the explanatory power of construal level theory for geographically distributed teams, construal level theory is not the only theory that provides explanations for these phenomena. On the contrary, numerous other theories have been put forth as explanations for differences in the perception of proximal and distant others, including theories of computer-mediated communication, attribution theory, and social categorization and identity theories. To justify the application of construal level theory to distributed team dynamics, we must therefore illustrate how construal level theory provides benefits above and beyond those we currently enjoy through these other theories. The benefits of a construal level theory approach, relative to other existing perspectives, are twofold. First, construal level theory matches and goes beyond the explanatory power provided by other theories used to explain the same phenomena in distributed work contexts. Second, the adoption of construal level theory increases both theoretical parsimony and integration by providing a single mechanism and explanation for phenomena that otherwise require multiple unrelated theories.

To address its increased explanatory power, we compare construal level theory to each of the three theories that have been most frequently used to explain perception at a distance. First, theories about computer-mediated communication (i.e., media richness, cues-filtered out and social information processing) have tended to explain different perceptions in terms of the leaner social information available at a distance (Daft & Lengel 1984; Sproull & Kiesler 1986; Walther 1992). Second, attribution theory explains perception through a fundamental proclivity to attribute the causes of positive and negative effects differently between proximal and distant colleagues (Gilbert & Malone 1995). Third, social identity theory explains perception through the different social categorizations of near versus distant others (Hogg & Terry 2000). A diagram depicting the areas of overlap and unique contributions of each of the theories is shown in Figure 1.

Insert Figure 1 about here

We explore each theory below and discuss the relative benefits of a construal level theory approach to explaining these phenomena.

Construal Level Theory and Theories of Computer-Mediated Communication

One approach to explaining how we judge geographically distant partners is derived from a set of related theories about technology-mediated information processing (Daft & Lengel 1984; Sproull & Kiesler 1986; Walther 1992). Although there are important differences among these theories, all of them are based on the idea that less social information is available to partners whose interactions are mediated by technology. From the perspective of “cues-filtered-out,” less social information leads to deindividuation (Sproull & Kiesler 1986) and a tendency to detect less individuality in others (Weisband & Atwater 1999). Social information processing theory suggests that it takes longer to acquire social information when interacting through the use of technology, but that relational outcomes (such as trust) eventually converge with the levels achieved in face-to-face interaction (Walther 1995). Relatedly, media richness theory argues that interacting via technology fundamentally reduces the bandwidth of communication and consequently, the sense of presence and immediacy associated with the interaction (Daft & Lengel 1986). Although these theories primarily address effects associated with the use of communication technology, they have been used to explain and predict the dynamics of distributed teams because, in practice, interaction at a distance relies on technology-mediated communication (Cummings 2004).

In contrast to this information processing approach, research on construal level theory shows that the effects of geographic distance are not dependent either on use of communication technology or lack of social information. Research has found that that there is an association between geographic distance and abstraction *even in situations where there is equivalent information about near and distant events* (Henderson et al. 2006) *and the social cues are exactly the same* (Fujita et al. 2006).

So while reduced social information or less bandwidth may contribute to the observed effects of technology-mediated interaction, these are not necessary conditions. Construal level theory suggests that people evaluate others differently at a distance even when given exactly the same social information, without the use of communication technology, and without even interacting. All that is required to affect judgment is the assessment that an event or person is psychologically distant, perhaps due to geographical, temporal or social differences. Thus, construal-level theory is able to predict perception of distant others before perceivers have the opportunity to interact with them.

Construal Level Theory and Attribution Theory

In contrast, according to attribution theory, when we observe unexpected behavior on the part of other people, our default assumption is that the behavior is the result of the other person's basic character or disposition. Similar to the information arguments of the previous section, this dispositional attribution is only "corrected" if situational information is available (Gilbert & Malone 1995; Jones & Nisbett 1972). Consistent with construal level theory, this effect is particularly true for unfamiliar (socially distant) others, rather than familiar (socially close) others (Idson & Miscel 2001). Although attribution theory typically does not make differential predictions based on temporal distance, Nussbaum, Trope and Liberman (2003) found that when making distant future predictions about others, perceivers relied on more global information about a target person (e.g., decontextualized dispositions) than on local behavioral and situational constraints. Perceivers constructed different representations of the same observed behavior depending on whether they had to predict the near or distant future behavior of others. When making distant future predictions, participants treated situationally-constrained behavior as diagnostic of a person's attitudes and generally predictive of attitude-related behaviors. Conversely, when making near future predictions, participants treated the same behavior as less diagnostic of a person's underlying attitudes and less predictive of their future behavior.

To explain the same outcomes, construal level theory argues that individuals perceive themselves (relative to others) as proximal, causing them to construe their own behavior at a lower

level (resulting in situational explanations), while distant others are seen as less proximal and therefore their behavior is construed at a higher level (with broad dispositional characterizations) (Liviatan et al. 2008). It is important to recognize that this differs from attribution theory as the expected effect is based on psychological distance (rather than access to information). Consequently, according to construal level theory, we might expect low-level construal (situational explanations) for others who are perceived as psychologically close for some reason other than geography (e.g., homophily or affinity) even if they are geographically distant. One example of this might be greater ability to empathize and generate situational explanations for the behavior of distant individuals who are structurally similar within an organization.

Construal level theory also casts a broader theoretical net than attribution theory. While attribution theory is triggered by unexpected behavior, construal level theory predicts effects even when behavior is expected. Also, while attribution theory explains the causes of behavior, construal level theory can be used to explain any cognitive function, including the formation of expectations, general assessments, and the development of impressions and preferences. Finally, while differences in attributions arise from restricted information flow due to physical distance, construal level theory explains effects arising from multiple forms of distance (e.g., temporal distance, geographic distance, social distance, etc.) and is not dependent on the presence or absence of situational explanations or information (Nussbaum et al. 2003).

Construal Level Theory and Social Identity Theory

Finally, according to social identity theory, category membership or identity influences how information is acquired and interpreted. Individuals categorized as similar (in-group) are given the benefit of the doubt in ways that are not extended to those categorized as dissimilar (out-group) from the perceiver. In-group members are credited more for positive action and are less likely to be held accountable for failures or negative actions (Brewer & Brown 1998). These forces encouraging positive interpretations of behavior suggest that a shared identity will help maintain positive impressions, even in the face of negative information. Furthermore, when group members are

working at a distance, this effect of group membership may become even stronger due to the absence of individuating cues (Lea & Spears 1992). Thus, by recognizing that individuals can belong to the same or different categories or groups, social identity theory bypasses the need for personal knowledge by allowing members to assess and perceive others based on category membership alone (Brewer & Kramer 1985).

In-groups are perceived as socially closer than out-groups (Brewer & Weber 1994). From a construal level perspective, it follows that people should form higher-level construals of out-groups than in-groups. Indeed, research has shown that more abstract, superordinate representations are constructed for out-groups (Park & Judd 1990). Extended to distributed teams, this would suggest that team members in London would perceive less heterogeneity among colleagues in Denver than among other London-based colleagues.

Construal level effects, however, explain variance beyond familiarity and similarity. In an experiment investigating similarity as an indicator of social distance, participants expressed more interest in receiving information about a socially close target – but this was only true for information about secondary features (e.g., the dress code) and not for information about primary features (e.g., salary) as might be expected with social identity theory. Even when adjusting for liking, the effect of social proximity on the search for low-level construal information remained significant (Liviatan et al. 2008). In a separate experiment, participants in the geographically near condition felt more familiar with, and similar to, actors in a video than did those who thought the actors represented a distant site (as might be expected with social identity theory) (Fujita et al. 2006). However, neither familiarity nor similarity was significantly correlated with the abstractness of the written descriptions, and adjusting for familiarity and similarity did not affect the results of distance on abstract perception as might be expected from social identity theory.

Construal level theory may also allow for more reflexive perceptions. Research on identity focuses on categorization of others, in large part because the self is by definition categorized as being in the in-group. Construal level theory, however, provides explanations for how individuals think

about objects or events in their own lives that may be affected by distance. For example, construal level theory may explain differing perceptions of one's own behavior when it occurs at a distant location – a perceptual disconnect reflected in the adage “When in Rome...,” or in recent advertisements suggesting “what happens in Vegas, stays in Vegas.”

In addition to explaining effects beyond those of similarity, familiarity or social categories, construal level theory also extends predictions to forms of distance beyond the social distance dimensions typically considered by social identity theory (e.g., temporal distance and geographic distance).

Construal Level Theory's Unique Benefits

While construal level theory matches – and in some cases goes beyond – the explanatory power of computer-mediated communication, attribution, and identity theories, it also provides a single, parsimonious theoretical account of effects previously explainable only through multiple, conceptually-unrelated theories. Theoretical parsimony has long been recognized as a goal for scholarship, encouraging scholars to boil down unnecessarily complex theoretical frameworks to simpler ones that can be applied more consistently, widely, and without qualification (Eisenhardt & Graebner 2007). By using construal level theory to explain a wide range of factors affecting perception and interaction at a distance, we gain such parsimony.

Furthermore, having a single theoretical perspective through which to see and explain multiple distributed team dynamics facilitates additional insights not previously recognized or addressed in research using mediated communication, attribution, or shared identity approaches individually. At the most basic level, construal level theory introduces the idea, not previously addressed in the literature on distributed work, that the abstractness or specificity of our views of others depends on perceived distance, and that construal in turn affects other judgments and behaviors. Beyond that, construal level theory provides a means of integrating multiple dimensions of distance, such as technology-mediation, social distance, temporal distance, and cultural distance, which are currently covered by separate theories. Finally, construal level theory makes explicit the

explanation of psychological distance that is frequently implicitly invoked in the literature on distributed work.

Theoretical Implications of Construal Level Theory for Distributed Teams

The literature on distributed teams has been criticized for being “a-theoretical” (Martins, Gilson & Maynard 2004); however, construal level theory addresses this criticism by enriching our ability to systematically explain and predict effects in distributed teams. While construal level theory predicts some of the same effects as the theories reviewed above, it proposes a different mechanism to explain those outcomes and makes predictions beyond the scope of existing theories. Consequently, we believe that construal level theory allows us to 1) reinterpret known patterns of empirical results, 2) identify other future research opportunities that have not been anticipated by our current theories, and 3) use the distributed teams context to expand construal level theory. We address each of these in turn.

Reinterpreting Existing Findings

In addition to providing a theoretical framework for future research, new insights can be gained by using the lens of construal level theory to revisit classic findings about distributed teams. One finding well-supported by research on computer-mediated groups is that people develop more positive and specific evaluations of distant partners over time (McGrath, Arrow, Gruenfeld, Hollingshead & O’Connor 1993; Walther, Anderson & Park 1994). Research has shown that group members communicating electronically, never having met face-to-face, become more trusting over time (Wilson, Straus & McEvily 2006) and within a span of 3 meetings members of electronic groups trust each other as much as do members of face-to-face groups. From the perspective of theories of technology-mediated communication, this finding has been attributed to the effects of uninhibited remarks and slower accumulation of social information in distributed teams. Viewed from a construal level standpoint, however, these effects can be explained as distant partners developing more specific construals about each other, thereby decreasing psychological distance and increasing trust. This is

consistent with the construal level theory argument that psychological distance not only causes construals, but that changing construals can also affect psychological distance (Fujita et al. 2006).

Another consistent observation about distributed work is that distant team members have difficulty sharing knowledge and developing an accurate idea of who knows what within the team (Cramton 2001; Kanawattanachai & Yoo 2007). Although this finding has been attributed to the failure to appreciate team members' local context at a distance and challenges in trusting distant team members, construal level theory suggests this may result because at a distance, members are more likely to see the forest than the trees. At a distance, they have difficulty perceiving the low-level, detailed, and contextualized features of their fellow team members' knowledge structures that enable the construction of an effective transactive memory system. This suggests a fundamentally different mechanism underlying these effects – one based not on availability of contextual information but on individual member perception and cognition.

Future Research Opportunities

In addition to suggesting alternative explanations for existing findings, construal level theory has the potential to focus our attention on new or underappreciated aspects of distributed work. One interesting research direction suggested by construal level theory concerns the relationships among multiple dimensions of distance. Spatial, temporal, and social distance are all thought to have similar impacts on psychological distance, which produces construal effects. Although there have been numerous models of dimensions of distance or virtuality (Bell & Kozlowski 2002; Griffith, Sawyer & Neale 2003; Kirkman & Mathieu 2005; Zigurs 2003), there has been little empirical attention to how these dimensions may interact (see O'Leary & Cummings 2007, for an exception). Construal level theory, built upon psychological distance, provides a framework for relating these multiple dimensions to one another. Although construal level theory could be interpreted as predicting linear, additive effects from multiple forms of distance, it ultimately depends on the effects on psychological distance. The different dimensions of distance may interact in unexpected ways, such that temporal

distance, for instance, may only matter if social distance is not too large. The existence and nature of such interaction effects remains to be tested.

Distant construals may also affect expectations and increase the likelihood of confirmation bias at a distance. If, as Nussbaum, Trope and Liberman (2003) have noted, team members expect distant others to behave more consistently than proximal team members, they may be even more likely to notice and attend to observations that are consistent with their expectations of those distant team members. Applied to distributed teams, it would be interesting to test whether expectations of consistent behavior from geographically distant team members would result in stronger confirmation bias at a distance. If true, this prediction would mean that impressions (including trust, reputation, and general assessments) would be harder to repair at a distance. Not only would general patterns be more readily detected and perceived as more stable at a distance, but the *expectation* of consistency would operate to maintain those impressions.

Finally, more research is needed on the impact of psychological distance and construal levels on organizational outcome variables. There is already some evidence that temporal distance and the resulting high-level construals improve some conflict and negotiation outcomes (Henderson, Trope & Carnevale 2006; Okhuysen, Galinsky & Uptigrove 2003). Indeed any task performance that benefits from a big-picture perspective is likely to be improved by distance. As such, situation awareness in military tasks (Wellens 1993) and the abstract representation expert programmers use to solve problems (Lister, Simon, Thompson, Whalley & Prasad 2006) may be facilitated by psychological distance and high-level construals. On the other hand, tasks that require highly specific, individualized views of other group members (such as the development of transactive memory systems) are likely to be impaired by psychological distance and high-level construals (Hollingshead, Fulk & Monge 2002). In addition, psychological distance seems likely to negatively affect cohesion, trust and willingness to work together in the future. By providing a more nuanced explanation about how dimensions of distance work, construal level theory moves us beyond traditional notions that distance or technology have uniformly negative effects in groups.

In keeping with recent calls for conceptualizing groups as dynamic “input-mediator-output-input” systems (Ilgen, Hollenbeck, Johnson & Jundt 2005), we expect that changes in outcomes will, in turn, affect perceptions of psychological distance. For instance, as team performance improves, team members may feel less distance from each other (Staw 1975). If trust declines, it may lead to a negative feedback spiral in which declining trust results in more psychological distance and further decreases in trust (Lindsley, Brass & Thomas 1995).

How Research on Distributed Teams Can Expand Construal Level Theory

In addition to construal level theory suggesting extensions of existing research on distributed teams, the literature on distributed teams can inform construal level theory. This is consistent with observations that systematically applying a theory in different settings improves that theory’s explanatory power by both delineating boundaries and broadening its scope (Whetten, Felin & King, in press). Research on distributed teams suggests other factors that may promote psychological distance, such as technology-mediated communication, ability to access team members for real-time interactions, etc. There are also models of what individual, social and organizational factors are likely to moderate perceptions of distance (Wilson, O’Leary, Metiu & Jett 2008). For instance, characteristics of the social network (such as density) in which the individuals are embedded may moderate the relationship between spatial distance and psychological distance. Concurrent membership on multiple teams may also add to feelings of psychological distance as team members are able to invest less time in any one team and must divide their focus among multiple projects (Mortensen, O’Leary & Woolley 2007).

By extending construal level theory to distributed teams and the group level of analysis, other theoretical possibilities become apparent. For instance, faultlines may be one group-level indicator of psychological distance. So, for example, we know that groups that are split into 2 spatially separated subgroups (3-3) experience more conflict than groups that are completely dispersed (1-1-1-1-1-1) (Polzer et al. 2006). It may be that members of the subgroups experience more psychological distance from the team and hence more conflict. If faultlines within a group create psychological

distance, it may also provide another theoretical explanation for why minority and majority subgroups perceive things differently. The minority subgroup, feeling greater psychological distance, may tend to construe all issues at a higher, more abstract level.

One of the other ways the literature on distributed teams can expand construal level theory is by highlighting the role of time in influencing team members' perceptions (Walther 2002). Research on distributed teams has consistently demonstrated that the effects of distance are not static (Walther, Anderson & Park 1994). Yet, to date, the literature on construal level effects has not explicitly addressed how the predicted effects might change over time. Considering the context of distributed teams, it would be interesting to study whether increases in interaction between team members have a linear effect on psychological distance over time. It may be that there is a threshold of psychological "closeness" that enables a team to function effectively – absent the negative effects of differences in construals. Indeed, the persistent recommendation for distributed teams to start with a face-to-face meeting (Kirkman, Rosen, Tesluk & Gibson 2004) may reflect the importance of that tactic in reducing psychological distance and thus paving the way for more consistent levels of construal within the teams.

Methodological and Practical Implications for Distributed Teams

In addition to the theoretical implications noted above, there are a number of practical and methodological implications of construal level theory for work with distributed teams.

Methodological Implications

Construal level theory raises some interesting methodological implications for the study of distributed teams. If, as construal level theory suggests, people think of geographically distant others in fundamentally different ways than they think of more proximal others, then we may have been comparing apples and oranges (while assuming we were measuring distant apples and near apples). If perceptions of distant team members are more abstract and global than perceptions of near team members, then it is likely to affect the underlying dimensionality of person perception within the team. Accordingly, when measuring perceptions in distributed teams, we would expect 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. 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). But if construal level theory is correct, just by virtue of geographic distance, individuals would have a harder time perceiving within individual differences and between individual differences. Given the theoretical reasons for expecting differences between groups, more systematic investigation of scalar invariance and factor mean differences is warranted.

Implications for Practice

There are also potential practical extensions and implications of construal level theory for distributed teams. For instance, one of the practical issues that has been debated in the literature is how leaders can manage others at a distance (Staples, Hulland & Higgins 1998; Weisband 2008). How leaders perceive events and team members at a distance could certainly affect the leaders' appraisals of performance. If distributed leaders think of distant team members in more abstract and global terms, it seems likely that this will also affect how information about those team members is stored and retrieved from memory. By extension, we would expect that their memory of proximal behavior or events will be more detailed than memory of distant behavior or events (even when they had the same original information about distant and proximal events). This suggests that leaders of distributed teams would be more susceptible to halo errors in the evaluations of geographically distant team members than more proximal members. So not only would leaders need to help team members develop more accurate impressions and attributions, but the leaders would also need to be aware of potential biases in their own decision-making.

Another interesting possibility is that there are individual differences in the tendency to use high- or low- level construals (Freitas, Salovey & Liberman 2001; Levy, Freitas & Salovey 2002).

As level of construal affects psychological distance (Fujita et al. 2006), people who are predisposed to make low-level construals may be uniquely suited to work at a distance. These individuals would be more inclined to feel close to their distant team members and more likely to evaluate them in the same way that they evaluate more proximal colleagues. Furthermore, people inclined to make low-level construals might make especially good leaders of distributed teams as they would be less inclined to engage in the dispositionalism that comes with geographic distance (Henderson et al. 2006). Alternatively, team members inclined to draw high-level construals might be more suited to help the team identify trends and patterns -- to help the team see the forest for the trees.

Conclusion

Construal level theory offers a broad, generative theory (Fielder 2007) and a unifying theoretical framework that allows us to parsimoniously explain a range of phenomena in distributed work. It challenges our thinking about why we have observed certain phenomena in distributed teams and suggests new patterns of results we should expect. Construal level theory also suggests interesting practical and methodological issues for those who study (and manage) distributed teams. Given repeated criticism about the dearth of theory in the literature on distributed teams, we propose that construal level theory provides a significant addition to our understanding of distributed work. In addition, although we have extended the theory to make predictions in the context of distributed teams, construal level theory may also explain phenomena in other forms of distributed work (e.g., telecommuting, expatriate assignments or any form of cross-national cooperation). It presents a compelling alternative means for explaining perceptions, judgments and evaluations in any context where spatial, temporal or social distance are important features of the environment.

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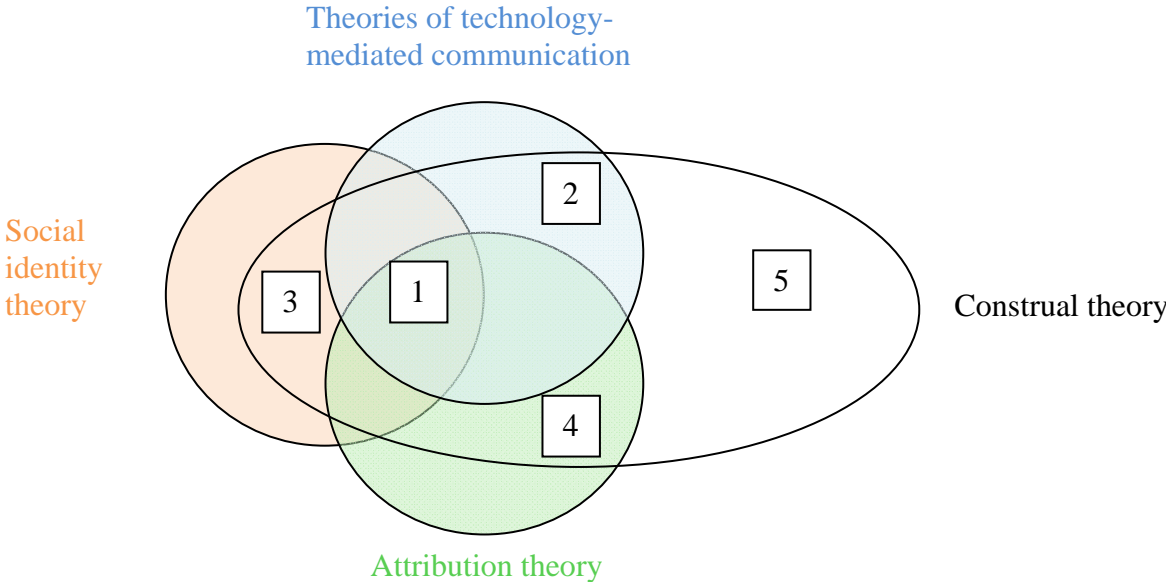
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Table 1. Summary of differences between high- and low-level construals

	High-level construals	Low-level construals
Conceptualization		
Basic definition (from Liberman & Trope 2008)	“abstract, schematic decontextualized representations that extract the gist from the available information.” (p.1202)	“concrete, relatively unstructured, contextualized representations that include subordinate and incidental features...” (p. 1201)
Description of construals (excerpt from Trope & Liberman 2003: p.405)	<ul style="list-style-type: none"> • Abstract • Simple • Structured, coherent • Decontextualized • Primary, core • Superordinate • Goal relevant 	<ul style="list-style-type: none"> • Concrete • Complex • Unstructured, incoherent • Contextualized • Secondary, surface • Subordinate • Goal irrelevant
Effects		
Mental representation		
<ul style="list-style-type: none"> • Observation: What is “seen” or perceived (Smith & Trope 2006; Wakslak, Trope, Liberman & Alony 2006) 	<ul style="list-style-type: none"> • Big picture; gestalt; “the forest” 	<ul style="list-style-type: none"> • Component parts; details; “the trees”
<ul style="list-style-type: none"> • Categorization (Liberman, Sagistrano & Trope 2002) 	<ul style="list-style-type: none"> • Create fewer, broad groups of objects 	<ul style="list-style-type: none"> • Create more, narrow groups of objects
<ul style="list-style-type: none"> • Interpretation of actions (Fujita, Henderson, Trope & Liberman 2006; Liberman & Trope 1998) 	<ul style="list-style-type: none"> • Focus on <i>why</i> the action is performed (superordinate purpose) 	<ul style="list-style-type: none"> • Focus on <i>how</i> the action is performed (subordinate means)
<ul style="list-style-type: none"> • Inference (explanation of behavior) (Henderson, Fujita, Trope & Liberman 2006; Nussbaum, Trope & Liberman 2003) 	<ul style="list-style-type: none"> • Viewed in terms of abstract dispositions of the actor (traits, values and attitudes) 	<ul style="list-style-type: none"> • Viewed in terms of specific situational factors
Prediction (Henderson et al. 2006)	<ul style="list-style-type: none"> • Focus on global trend 	<ul style="list-style-type: none"> • Focus on local (temporary) deviation
Evaluation (Trope & Liberman 2000)	<ul style="list-style-type: none"> • Based on central, goal-related issues • Based on desirability (value of the end-state) 	<ul style="list-style-type: none"> • Based on peripheral, goal-irrelevant issues • Based on feasibility (means used to reach end-state)

Figure 1. Diagram of the theoretical space



Theoretical space		
1	Area of overlap for all 4 explanations	<ul style="list-style-type: none"> The theories offer explanations about why, and under what circumstances, we think of others differently
2	Area of overlap between theories of social information in technology-mediated communication and CLT	<ul style="list-style-type: none"> Both theories agree that loss of social information about others changes how we think of them. The difference is that for CLT, lack of social information is a contributing, but not necessary, cause of psychological distance (Fujita et al., 2006). Theories of technology-mediated communication cover circumstances in which technology is used to communicate with others. CLT covers situations of varying degrees of distance (including <i>but not limited to</i> situations involving communication, use of technology, or even other people [one can feel distant from events in one’s own life]). <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">5</div> So CLT would also cover how we think about distant others before we have a chance to communicate with them, how we might think of two people differently even though we have the same pattern of communication with both (for instance communicating exclusively by e-mail with a co-located colleague and a distant colleague, etc).

<p>3</p> <p>Area of overlap between theories of social identity/categorization and CLT</p>	<ul style="list-style-type: none"> • Both theories agree that shared identity changes evaluations of others; that shared identity results in more specific, heterogeneous assessments of in-group members, whereas out-group members are viewed as more homogeneous. Again, the difference is that for CLT, lack of shared identity would be a contributing, but not necessary, cause of these differences in perceptions. Similar effects can be produced in the absence of differences in identity. • The explanation for the effects differs in the two theories: psychological distance versus social distance (or categorization). According to CLT psychological distance can also be produced by means other than social distance including temporal distance, geographic distance, etc. • Theories of social identity/categorization cover relationships between self and others. <p>5 CLT also explains how we think about events in our own life (for instance, how we might think about our behavior differently if it occurred at a distant location).</p>
<p>4</p> <p>Area of overlap between attribution theory and CLT</p>	<ul style="list-style-type: none"> • Both theories address why individuals make person-based attributions about the behavior of others. Both theories predict that distributed team members are more likely to make person-based attributions (as a result of less situational information, in the case of attribution theory; and as a result of psychological distance leading to more general trait-based assessments according to CLT). • CLT explains differing perceptions even in the absence of differences in availability of information. • Attribution theories focus on a cognitive search for causes, stimulated by unexpected behavior on the part of others. <p>5 CLT covers any cognitive assessment (the formation of impressions, general assessments of others, expectations of others' behavior, etc.)</p>
<p>5</p> <p>Additional areas addressed by CLT not covered by the other theories</p>	<ul style="list-style-type: none"> • CLT introduces the notion, not previously addressed in the literature on distributed work, that the abstractness or specificity of our views of others depends on distance, and that construal in turn affects other judgments and behaviors. • CLT provides a way of integrating multiple dimensions of distance (technology-mediation, social distance, temporal distance, cultural distance) currently covered by separate theories. • CLT makes explicit an explanation (psychological distance) that is frequently invoked in the literature on distributed work but is rarely defined.