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Distance, ambiguity and appropriation: Structures affording impression management in a collocated organization

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ABSTRACT

Communication and collaboration technologies have recently given rise to unprecedented flexibility in work arrangements, including telecommuting and virtual teams with geographically distributed participants. Much research has consisted of comparing distant and collocated teams, arguing that distance constrains communication opportunities, but this effect can be countered somewhat with communication media. In an "always connected" world, however, traditional conceptualizations of distance may be less useful in that communication opportunities are virtually constant for both distant and collocated teams. Working from an adaptive structuration perspective, we argue for a more nuanced treatment of distance, looking at its more specific effects, such as regulating the probability of unexpected face-to-face encounters, and affecting individuals' control over the release of information. We show that even in a collocated setting, members of the organization we studied enacted structures that reflected the effects of distance on their behavior, but also reflected social constraints that enabled control over information flow, and the use of language to explain their behavior and maintain positive impressions.

1. Introduction and background

Communication and collaboration technologies have recently given rise to unprecedented flexibility in work arrangements (e.g., Bailey, Leonardi, & Barley, 2011; DeSanctis & Monge, 1998; Olson, Zimmerman, & Bos, 2008). While the notion of working in an office clearly has not gone away as some once predicted, there is substantial evidence of people working together across distance in many ways, including teleworking from home (Dimitrova, 2003; Leonardi, Treem, & Jackson, 2010), distributed or virtual teams within organizations (DeSanctis & Monge, 1998; Jang, Steinfield, & Pfaff, 2002), and teams that span or transcend organizational boundaries to facilitate large, complex projects not previously possible (Cummings & Kiesler, 2007; Nentwich, 2003). Importantly, these same technologies – including conferencing systems, awareness tools (Tang, 2007), calendar/scheduling systems (Palen & Grudin, 2002), messaging (Handel & Herbsleb, 2002) – have also provided collocated work teams with unprecedented options and tools for communication and coordination.

As Leonardi et al. (2010) point out, a key assumption in the adoption of communication media in distributed groups is frequently that the technology will serve to decrease perceived distance between collaborators by affording awareness of each other's presence, availability and activities, and increasing opportunities for communication (Olson & Olson, 2001). An adaptive structuration approach, however, would suggest that users will also appropriate these technologies to achieve their own objectives (DeSanctis & Poole, 1994; Orlikowski, 2000).

More generally, adaptive structuration theory is concerned with the ways in which users appropriate technologies to accomplish goals that are specific to their environment, and that may not be congruent with those of the technology designers (DeSanctis & Poole, 1994). In this view, technologies act as structures that constrain individual agency, but social structures and recurring action patterns also shape and constrain behavior. Moreover, Orlikowski (2000) suggests that work practices and technology usage change over time, and that changes in both work practice and technology can yield unexpected outcomes.

Consistent with this approach, Leonardi et al. saw evidence of teleworkers using media to both increase *and* decrease perceptions of distance: by exploiting opportunities for mediated interaction, but also exploiting ambiguity afforded by distance to dissimulate; that is, create impressions of activities or work arrangements not actually taking place (e.g., saying one is too busy to talk, when this is technically not true). Leonardi et al. present these results in contrast to collocated teams, and suggest a more dynamic, nuanced conceptualization of "distance" that reflects notions of availability and controls over information flow.

We argue that a more nuanced treatment of distance should also force re-examination of media usage in collocated groups.

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After all, many collocated workers also report a sense of communication overload or being overwhelmed by opportunities to communicate, at the expense of time to get work done (Czerwinski, Horvitz, & Wilhite, 2004; Turkle, 2011; Whittaker & Sidner, 1996). There is also substantial emerging evidence that people in social settings exploit ambiguities afforded by media to craft sometimes-deceptive explanations for behavior that might otherwise seem rude or anti-social (e.g., texting "I'm on my way" before one has actually left home to explain impending tardiness) (Birnholtz, Guillory, Hancock, & Bazarova, 2010; Hancock et al., 2009; Reynolds et al., 2011).

1.1. Distance, ambiguity and appropriation

In most treatments of communication technology, perceived distance – frequently geographic – is treated as a constraint on awareness and communication opportunities, and one that technologies seek to bridge by affording opportunities to share awareness information and better coordinate opportunities for interaction (e.g., DeSanctis & Monge, 1998; Olson & Olson, 2001; Tang, 2007).

This relatively simple conceptualization of distance is challenged by many properties of the current technological environment. In the first place, distance certainly constrains the opportunity to interact with others face-to-face, but does not limit the opportunity to interact with them at all. Quite the contrary sometimes seems true, in fact, with many observers commenting that in an "always on" world, people feel overloaded by communication opportunities (Chen, 2011; Gonzalez & Mark, 2004; Turkle, 2011). Moreover, a recent Pew report (Smith, 2011) found that 29% of participants periodically turn off their phones simply to get a break from the interaction opportunities it provides. Thus, it is no longer the mere fact of geographic distance that constrains opportunities for interaction with others.

As a result, the distinction between "local" and "distant" workgroups or collaborators is becoming less useful. Indeed, it is a relatively small number of groups that experience the sort of "radical collocation" (e.g., Teasley, Covi, Krishnan, & Olson, 2002) that truly facilitates near-constant awareness and in which most interaction is likely to be face-to-face. Even groups working in the same building or site often consist of individuals who work in separate offices, have multiple simultaneous projects; and use media to communicate and coordinate a substantial fraction of the time (Tyler & Tang, 2003; Whittaker, 2005).

At the same time, there are clear differences between interacting with those who are physically close and those who are distant. Teasley et al. (2002) found radically collocated groups to be significantly more productive, for example; and Cummings and Kiesler, (2007) suggest that researchers on the same campus have fewer coordination problems and are often more productive. We argue here for a more nuanced treatment of distance that reflects two key traits that constrain behavior: (1) regulation of the likelihood of face-to-face interactions, and (2) ambiguity about others' behavior. We do so using an adaptive structuration approach (DeSanctis & Poole, 1994), suggesting that users will appropriate technologies in ways that are not always congruent with designers' intent, and that they do so by enacting structures that arise through continued practice and use of systems (Orlikowski, 2000).

1.2. Distance and face-to-face encounters

The first constraint of distance is that it serves as one key regulator of the probability of face-to-face encounters. Repeated studies have shown that people talk more to those who are physically closer to them (Allen, 1977; Kraut, Egido, & Galegher, 1990). It is easier to be aware of those who are physically proximate (Bellotti & Bly, 1996), to start conversations with them (Birnholtz, Gutwin, & Hawkey, 2007; Whittaker, Frohlich, & Daly-Jones, 1994), and to overhear or unexpectedly encounter others (Teasley et al., 2002). In other words, despite media that enable interaction with others, it is often simply easier to talk to others who are physically proximate.

At the same time, however, distance also regulates the probability of unexpected encounters, and this makes it more difficult to avoid others. In conversations with physicists who commuted between their home universities in the United States and the CERN particle accelerator in Geneva, Switzerland, for example, Birnholtz (2007) found that many thought it worthwhile to fly to Geneva once per month simply to increase the likelihood that they would receive responses to emails from colleagues at CERN (i.e., so they could see them in the cafeteria or knock on their doors).

In other words, it is easier for those who are physically distant to create false impressions online than it is for those who are physically proximate, because the probability that they will be seen or caught in the act is lower (Leonardi et al., 2010). A similar principle underlies self presentation in online environments. Early work on online identity suggested that people could deeply explore alternative identities online (e.g., Turkle, 1995), with few real constraints on their behavior. This early work, however, assumed a vastly distributed, global Internet user population; and that people were looking for online-only friends who they were unlikely to meet face-to-face. Increasingly, however, the rise of social networking and online dating sites means that boundaries between online and offline social worlds are blurred (Ellison, Hancock, & Toma, in press). People use the online environment to manage and expand networks of friends, many of whom they know or would like to meet offline. This increases the probability of face-to-face encounters, which constrains the extent to which people can manipulate their identity or other factors that affect others' impressions of them (Toma, Hancock, & Ellison, 2008). Face-to-face encounters constrain when and how people could use technology to manipulate others' impressions. Toma et al., for example, found that online daters were more likely to lie about their weight than their age, likely because weight is a variable trait that is difficult to verify.

In this way, there are clear differences between the telecommuters studied by Leonardi et al. (2010) and those who work together at the same site, but we would still expect those who are at the same site to engage in some dissimulation. We would expect, however, that they would do so differently, because the probability of encountering colleagues is higher. Thus the first research question being asked here is:

> RQ1: How do people at the same site appropriate technologies and enact structures that enable them to manage others' impressions of them, even when the probability of encounter is high?

1.3. Distance and ambiguity

In addition to the probability of encounter, distance also affects the visibility of behavior (Herbsleb, Mockus, Finholt, & Grinter, 2000; Hinds & Bailey, 2003). Distance mediates a critical balance between transparency and ambiguity. When people are radically collocated (and distance is close to zero), others are readily visible. While there are strategies people use in these environments (e.g., putting on headphones or focusing intently on work, as detailed in Birnholtz et al., 2007) to signal their availability or activities to others, it is more difficult to hide or give the impression that one is doing things not actually taking place. As distance increases beyond the radical collocation of a shared room, however, people are no longer constantly visible to each other and there is some ambiguity about others' attention or activities (Boehner & Hancock, 2006).