

8 Studying Work Practices in Organizations

Theoretical Considerations and Empirical Guidelines

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A recent practice turn in the communication and organizational sciences has led many researchers to study work in practice. In this chapter I suggest that studies of work practices in organizations would benefit from conceptual clarification. To do so, I organize this review around three central questions: (a) what are work practices? (b) what role do work practices play in the process of organizing? and (c) how can scholars build theory from empirical studies of work practices? I suggest several ways in which the concept of work practice can be clarified to provide coherence for communication researchers.

Over the last several years communication theorists have become interested in collecting data on and theorizing about work in practice (Cheney & Ashcraft, 2007; Cooren, 2010; Gibbs, 2009; Leonardi & Rodriguez-Lluesma, 2013; Treem, 2012). This interest parallels a broader trend in the communication and organizational sciences that focuses on how people's networks (Barley & Kunda, 2001), knowledge (Brown & Duguid, 2001), social skills (Wenger, 1998), and identities (Kuhn, 2006), along with their ability to coordinate (Carlile, 2004), collaborate (Nicolini, Mengis, & Swan, 2012), and develop shared technology use patterns (Orlikowski, 2000), emerge out the practice of their normal work. Most scholars who are interested in studying practice recognize that social life is an ongoing production and, consequently, emerges through people's everyday actions (Knorr-Cetina, 2001; Nicolini, 2012; Pickering, 2001; Schatzki, 2005). Feldman and Orlikowski (2011) elaborate on this emergent and situated characterization of practice, arguing that by

focusing on the empirics of practice, we understand organizational phenomena as dynamic and accomplished in ongoing, everyday actions. In focusing on practice theory, we understand the mutually constitutive ways in which agency is shaped by but also produces, reinforces, and changes its structural conditions. In focusing on practice ontology, we understand that it is practices that produce organizational reality. (p. 1250)

For communication scholars, such a practice turn—and the related focus that it suggests for the activities in which people engage during the practice of their work—seems like a natural fit. Craig (1989, 1999, 2001), for example, has long argued that communication is a practical discipline by claiming that communication theory can and should assist in the cultivation of communication as a social practice. And Deetz (1992, 1994, 2000) has forcefully argued that communication theorists should dispense with studying how communication practices enable people to convey meaning and focus on how the practice of communication produces meaning among individuals. Such admonitions have led communication scholars, broadly, and organizational communication researchers more specifically, to turn to traditions such as the dramaturgical perspective (Goffman, 1959), ethnomethodology (Garfinkel, 1967), negotiated order theory (Strauss, 1978), structuration theory (Giddens, 1984), and practice theory (Bourdieu, 1990), among others to consider how the communicative practice of work is constitutive of the organizing process (e.g., Ashcraft, Kuhn, & Cooren, 2009; McPhee & Zaugg, 2000; Putnam & Nicotera, 2010; Taylor et al., 2007). Common to many of these approaches is an interest in understanding what types of practice organizational members routinely perform in the accomplishment of their work roles. Broadly named, the study of *work practices* in organizational settings attempts to understand the recursive relationship between organizations and the actions that give them coherence by focusing on the process of organizing as it happens.

Yet despite the ease with which studies of work in practice and the ontological position that communication is constitutive of organizing seem to fit together, there are, today, at least two related issues that impede communication scholars from developing better theoretical understanding and empirical evidence for how the communicative practice of work can create, sustain, and potentially dissolve the process of organizing. First, although communication and organizational scholars have recently begun to take seriously how work is conducted in practice, they often fail to actually examine and describe people's work practices. If work is seen to be a communicative phenomenon that occurs in practice (Heaton, 1998; Jackson, Poole, & Kuhn, 2002; McPhee & Poole, 2001; Putnam & Stohl, 1990; Taylor et al., 2001), then it would seem to behoove communication scholars to have some theoretical understanding about what work practices actually are. Perhaps the reason that communication scholars who are interested in the practice of work do not routinely describe or analyze people's actual work practices is due to the second issue: That studies that discuss work practices do not always treat the concept similarly. For example, some researchers argue that work practices are situational and are only useful in explaining outcomes in the immediate contexts of their occurrence (Kuhn & Jackson, 2008; Lave & Wenger, 1991; Orr, 1998; Suchman, 1987). Others suggest that types or classes of work practices can be identified across communities of actors (Edmondson, Bohmer, & Pisano, 2001; Feldman & Pentland, 2003; Neff, 2012; Orlikowski, 2002). Some researchers argue that work practices are reformulated due to external pressures exerted on social

system (Barley, 1986; Leonardi, 2012; Robey & Sahay, 1996; Vaast & Walsham, 2005), while others claim that they change and adapt in response to internal pressures (Contractor, Monge, & Leonardi, 2011; Knorr-Cetina, 1999; Latour & Woolgar, 1979; Leonardi & Bailey, 2008).

To take some initial steps toward resolving these issues, I argue that studies of work practices in organizations would benefit from some conceptual clarification of their object of inquiry. To do so, I organize this review around three central questions: (a) What are work practices? (b) What role do work practices play in the process of organizing? and (c) How can scholars build theory from empirical studies of work practices? In attempting to answer these questions, I suggest several ways in which the concept of work practice can be clarified to provide conceptual coherence for organizational communication researchers.

What Are Work Practices?

All studies of work practices seem to agree on at least one fundamental point: That understanding *how* people work is part and parcel of the process of organizing. That said, researchers have looked at the practice of work at a variety of empirical levels of analysis. At perhaps the most micro level, scholars have suggested the *gesture* (Murphy, 1998), the *speech act* (Collins, 1981), and the *relay* (Heath & Luff, 2000) are all practices through which work is accomplished. Although exhaustingly microsocial in their detail, each concept defines a fundamental action through which work is carried out. In some senses, such microsocial action is the basic foundation upon which work is accomplished. Without actions that are indexical (they provide knowledge to make sense of the world), accountable (they make people's actions mutually intelligible), and reflexive (commonsensical and intuitive to others), individuals could not meaningfully interact with one another to carry out the tasks of their organization or occupation (Garfinkel, 1967).

Other scholars have suggested that students of organizational communication can learn the most about work when such microsocial actions are viewed collectively (Lammers & Barbour, 2006). That is, shifting the scope of analysis of analysis (in terms of time and number of actors) lifts practice out of the minutia of everyday life and defines those microsocial features as resources that organizational members draw upon in the enactment of their work roles. A practice such as an accounting tabulation (which defines a certain class of professional work) would consist of multiple microsocial actions that together constitute a socially recognizable practice (Orlikowski, 2000). Thus, concepts such as the *negotiation* (Strauss, 1978), the *interaction* (Barley, 1986), and the *move* (Pentland, 1992) all represent a more meso-level in which practice can occur.

Moving again up levels of analysis, practices can be conceptualized as the aggregate of these meso-level actions into more macrosocial categories such as *performances* (Pacanowsky & O'Donnell-Trujillo, 1983), *routines* (Feldman & Pentland, 2003), and *patterns* (Perlow, Gittel, & Katz, 2004; Stohl, 2001). For

example, the hiring routine can be seen as a combination of meso-level actions such as screening applicants, holding colloquia, and negotiating contracts. When taken together, these macrosocial categories of practice represent the “primary means by which organizations accomplish much of what they do” (Feldman & Pentland, 2003, p. 94).

I have suggested that the concept of work practices can be viewed from a multitude of empirical levels of analysis. I make no attempt to argue for a nested sequence or hierarchy of action, but instead simply suggest that one can look at molar or less molar levels of analysis and encounter what may be broadly termed a work practice. Thus, rather than speculate as to which is the most appropriate level analysis for studies of work practices, I suggest a more fruitful ploy is to examine the similarities uncovered among studies of work practices at various empirical strata. In so doing, I identify five common features of a work practice.

The five characteristics of work practice discussed below should be considered neither exhaustive nor exclusive. They do not operate independently of each other, but overlap and interact at the same time and over time. And as will be apparent, I have tried to emphasize their similarities and interdependences in our discussion. Our explication of them as distinct characteristics is for analytic convenience only. That one characteristic cannot exist without another as a feature or work practices should be kept always in mind.

Materially Bound

In his analysis of the work practices of scientists across various laboratories, Pickering (1995) tackled head-on the debate over social vs. material antecedents of practice. Pickering suggested that practice should be considered as a mangle of human and material agency. Criticizing research programs such as the sociology of scientific knowledge (SSK) for casting all discussions of practice generation and maintenance in sociological terms, Pickering advocated for a view of work practices as materially bound. He suggested that the material world itself has “agency”—although not interest—in that it “does things” that cannot be predicted in advance:

The world, I want to say, is continually *doing things*, things that bear upon us not as observation statements upon disembodied intellects but as forces upon material beings. Think of the weather. Winds, storms, droughts, floods, heat and cold—all of these engage with our bodies as well as our minds, often in life threatening ways. . . Much of life, I would say, has this character of coping with material agency, agency that comes at us from outside the human realm and that cannot be reduced to anything within that realm. (Pickering, 1995, p. 6)

In order to explain work practices, researchers need to understand the action of the material properties that those very work practices are aiming to condition.

Within research on organizations, studies of material agency are quite rare. The ontological rejection of technologically deterministic thinking brought about by social constructivist programs of research (DeSanctis & Poole, 1994; Fulk, 1993; Orlikowski, 1992) has tended to downplay notions of material agency in the defense of the constructivist position. However, as Leonardi and Barley (2010) observed, a voluntaristic stance on technological change does not necessarily preclude consideration of material factors in the formation and maintenance of social conduct. Pickering himself attempted such a balanced perspective in his discussion of Giacomo Morpurgo's quest to find evidence for or against the existence of elementary particles called quarks. As Pickering suggested,

Neither Morpurgo nor anyone else could have foreseen the specific resistance he would encounter in his work. That the first grain to be examined moved in the same direction when the direction of the electric field was reversed just happened in the real time of Morpurgo's practice: likewise the appearance (twice) of a continuum of charges, and of temporally varying changes, in his later measurements. (1995, p. 91)

Although Morpurgo's practice was directed to a substantial degree by a variety of social factors—access to information, the structure of his laboratory, and interaction with colleagues—the material world also acted upon Morpurgo's practice in ways that shaped and defined it. Similarly, Sims's (1999) discussion of the practice of concrete testing for earthquake analyses shows how the unpredictable character of the shaking earth and of the elasticity of cement meant that work practices of concrete engineers can only be understood by examining the resistances and accommodations made to their encounters with material agency.

Other studies have offered a view of the material agency (in-line with Pickering's use of the term) of technologies themselves. Guillemin (2000) described how the work practices of physicians in a menopause clinic could be seen as a set of accommodations to the material demands of the questionnaires they used to diagnose potential patients. In addition to shaping the work of the physicians, the forms also impacted the women's own practices of understanding their conditions:

Self-assessment charts and preclinic questionnaires performed certain kinds of work in the menopause clinic, resulting in particular kinds of effects. These charts may have been helpful in assisting the quick gathering of information about a woman's symptoms and medical history. However, the charts worked beyond simple information gathering. The charts required women to organize their individual and possibly complex experiences around a discourse of hormonal production and loss. In completing these charts and questionnaires, women's experiences were further shaped into a model of menopause based on hormone deficiency. (Guillemin, 2000, p. 460–461)

Without falling into the trap of deterministic thinking, a view of practice as materially bound emphasizes the importance of considering the ongoing negotiation between the material and social elements of practice. As authors who study the relationship between communication and materiality have recently pointed out (see, for example, Ashcraft et al., 2009; Leonardi, Nardi, & Kallinikos, 2012), although the material properties of technologies can indeed manifest themselves as constraints and affordances on the work practices of users, they should not be seen to determine it. Rather, work practices should be seen as Taylor (2001) advocated, as the actions through which the material and social are imbricated—in which material properties are translated into social actions, and vice-versa. Following Taylor's work, Leonardi (2012) has offered one theory about how the social and the material become entangled. This theory suggests that coordinated human agencies (social agency) and the things that the materiality of a technology allow people to do (material agency) become interlocked in sequences that produce the empirical phenomena scholars call technologies, on the one hand, and organizations, on the other. As nonhuman entities, artifacts exercise agency through their performativity; in other words, through the things they do that users cannot completely or directly control. For example, a compiler translates text from a source computer language into a target language without input from its user and a finite element solver calculates nodal displacements in a mathematical model and renders the results of this analysis into a three-dimensional animation without human intervention. Although each of these actions is instigated by a human (presumably to address a particular, local need), the material artifact itself acts (exercises material agency) as humans with goals engage with its materiality.

Both coordinated human (social) and material agencies represent capacities for action, but they differ with respect to intentionality. Pickering (2001) offered a concise and useful empirical definition of human and material agencies that illustrates this difference. For Pickering, social agency is a group's coordinated exercise of forming and realizing its goals. Thus, the practice of forming goals and attempting to realize them is a concrete operationalization of social agency. Material agency, by contrast, is devoid of intention and materiality does not act to realize its own goals because it has none of its own making. In other words, "machine artifacts have no inherent intentionality, independent of their being harnessed to or offering possibilities to humans" (Taylor, Groleau, Heaton, & Van Every, 2001, p. 137). Thus, material agency is operationalized as the actions that a technology takes, which humans do not immediately or directly control. Given this important difference with respect to intentionality, even though social and material agencies might be equally important in shaping one's practice, they do so in qualitatively different ways. The important point, however, is that work practices cannot be fully explained by examining the agency of the people who conduct them. To understand how and why people work as they do, researchers must also pay close attention to the way that their own agency becomes imbricated with the agency of the

various materials by and through which they interact in the course of their normal work.

Recurrently Enacted

A second characteristic of work practices is that they are recurrently enacted over time. One feature that makes work practices an important empirical focal point is that they frequently occur in patterns, and, in so doing, have important implications for the process of organizing. As Vaast and Walsham (2005) commented,

The recurrent dimension of practice is key to the dynamic between agency and structure in practice theory. . . . As agents repeatedly and regularly act in certain ways, they contribute to the enactment of social structural properties. (p. 67)

Because work practices are continually enacted over time, researchers have suggested that they can be seen to evince structural properties (Collins, 1981; Giddens, 1984; McPhee & Poole, 2001; Strauss, 1978). Here, structural properties are often as patterns of action and interaction, which scholars then assume for organizational structure in the aggregate. In this way, structure is both a medium and outcome of communication. That is, work practices serve as the foundations for social structure inasmuch as they are recurrently enacted. Once their enactment ceases, however, there are no patterns upon which organizational structures can be built. Thus, in considering the nature of work practices it seems that their recurrence plays a pivotal role.

Perhaps no one has taken a more aggressive approach at exploring the implications of recurrent practice than Orlikowski (1992, 1996, 2000). Drawing on Giddens's explication of the structuration process, Orlikowski has suggested that the types of structural features enacted in everyday work practices form the basis for a community's organizing schemata. Orlikowski's theory of enacted practice is illustrated in her empirical cases of technology-centered organizational change. Building a social constructivist framework, Orlikowski (2000) suggested that:

Human interaction with technologies is typically recurrent, so that even as users constitute a technology-in-practice through their present use of a technology, their actions are at the same time shaped by the previous technologies-in-practice they have enacted in the past. (p. 410)

On the one hand, the recurrent nature of practice reminds the reader that work practices are always historically influenced. Thus, in their recurrence, historical patterns accrete into new work practices over time. However, constitution of a particular organizational or occupational structure is dependent upon recurrence of work practices. Barley (1986) made the argument that practices take

on a constitutive nature when, through their recurrent enactment, they accumulate temporally emergent responses into recognizable patterns. Latour and Woolgar's (1979) influential look into the production of scientific facts in an endocrinology laboratory at the Salk Institute revealed that the production of scientific facts is made possible only through the recurrent use of a number of rhetorical practices of persuasion in the production of research articles. As the authors suggested, if at any moment scientists abandoned the performance of such rhetorical practices, or varied them slightly, the perceived objectivity of a scientific fact would quickly unravel. Thus, the social world of organizing is produced through the continued perpetuation of work practices.

Orlikowski has also suggested that the recurrence of work practices produces what might be termed a side-effect of their continued enactment: They become institutionalized. In this sense, work practices often reveal a taken-for-granted status. That is, individuals begin to think that because they recur with such frequency, that they must continue to recur as such:

Over time, through repeated reinforcement by the community of users, such technologies in practice may become reified and institutionalized, at which point they become treated as predetermined and firm prescriptions for social action, and as such, may impede change. (Orlikowski, 2000, p. 411)

The recurrent enactment of work practices produces a stabilizing force (Berg, 1997; Hard, 1994; Kaghan & Bowker, 2001; Knorr-Cetina, 1999; Putnam & Nicotera, 2010). New work practices or the modification of existing ones is subsumed under the logic of the objectivity of existing practice. However, if at any point work practices cease to recur, their stabilizing force is lost. It is the disturbance of such stabilizing forces, the disjuncture from the normal recurrence of practice that is brought about by, for example, the introduction of a new technology that can then lead to the reformation of and realignment of work practices (Leonardi, 2009a). What such exogenous shocks remind us is that work practices become important mediators and outcomes of social action when they serve as "clusters of recurrent human activity informed by shared institutional meanings" (Schultze & Orlikowski, 2004, p. 88).

Temporally Emergent

A longstanding view held by those that study the way individuals in organizations work is that work practices are temporally emergent. What I call here temporal emergence goes by a variety of different names including situated action (Lave & Wenger, 1991; Orr, 1996; Suchman, 1987) and improvisational response (Edmondson et al., 2001; Orlikowski, 1996; Pentland, 1992). The basic point here is that although certain actions toward organizational goals can be planned in advance, the patterns of resistance and accommodation to the demands of a changing world can only be, as Knorr-Cetina (1995) has

suggested, unfolded in practice. In other words, work practices themselves have a temporally emergent character. It is only when choices made in the social realm of organizing come into contact with the material constraints and affordances of the practical world that the contours of work practices emerge.

A number of studies take the temporally emergent character of practice as a key empirical focal point. Orlikowski's (1996) detailed study of the implementation of an incident tracking support system into the work of computer technicians demonstrated the situated and temporally emergent character of practice in response to organizational changes. In thinking about the changes in practice occasioned by the new technology, Orlikowski (1996) summarized,

The transformation, while enabled by the technology, was not caused by it. Rather, it occurred through the ongoing, gradual, and reciprocal adjustments, accommodations, and improvisations enacted by the CSD members{. . .}their action subtly and significantly altered the organizing practices and structures of CSD workplace over time, transforming the texture of work, nature of knowledge, patterns of interaction, distribution of work, forms of accountability and control, and mechanisms of coordination. (p. 69)

The types of changes to practice that took place after the implementation of the new technology can be seen as a temporally emergent response to the merging of the material features of the technology with the existing demands of the social system. Such meditations of the temporally emergent character of work practices led Orlikowski (2000) to advocate a perspective where the outcomes of a newly implemented technology should be seen as enacted in practice. The finer point to be taken from this suggestion is that the functionality of a technology—its ability to be used to accomplish a particular task—does not exist outside of a situated context of use. In other words, our expectations of what features a technology has, what they are good for, how they should be used, and how they will change the way people work (all of which people draw from their temporally emergent encounters with the technology), buffer our perceptions of the material elements, those elements of the technology that do not change across contexts of use. To this end, Berg (1997) has similarly suggested that, “Only as part of a concrete work practice does a formal tool come to life. By itself, it does not do anything: People must turn on the computer to use the record” (p. 415). Thus, the lesson to take from these studies is that

To be made useful, these devices needed to be read in relation to each other and to an unfolding situation. Technologies in this view are constituted through an inseparable from the specifically situated practices of their use. (Suchman et al., 1999, p. 399)

The temporally emergent character of work practice, however, is not confined to interaction with information technology. Hogel's (1995) study of the work of

organ procurement coordinators recounted earlier also demonstrates this point. Coordinators consistently worked in a situation in which the guidelines for standard donation procedures meant different things depending on their interpretation of the context surrounding the possible donations:

Interpreting these guidelines, however, takes place in interaction with brain-dead bodies, and their materials, recipients for those materials and the individuals who have an interest in them, and, finally, knowledge and beliefs brought into the setting from previous experiences. (Hogle, 1995, p. 494)

As practice unfolded over time, coordinators shaped their actions to respond to their changing ecology of interests. Similarly, Pentland's (1992) study of the "moves" made by call center technicians in response to user problems demonstrates the emergent character of work practices. Technicians could not know in advance the problems users would call about. Therefore, in the practice of responding to their needs, technicians had to make purposeful accommodations to their practice, including decisions about transferring a call, escalating its status, or making a termination. Thus, certain generic practices such as assigning, referring, and transferring could serve as broad guidelines for action, but the actual decision to engage in a practice or modify its content was constructed on the fly by technicians in the temporal course of their work.

Historically Influenced

A basic insight offered by general theorists of practice is that all human action is, to a certain extent, historically bound. Garfinkel's (1967) ethnomethodological approach, for example, described practice as "indexical." Within the ethnomethodological framework, people are seen to make sense of action by indexing it (understanding it, cognitively, through the lens of a prior occurring set of actions) to a particular circumstance that has occurred before. In this way, they can interpret their ongoing and immediate action in light of their previously constructed interactions with the world. Building on this framework, Zucker (1977) showed that work practices are apprehended and perpetuated by linking present action to actions occurring in the past. Thus, practices "persist" over time because individuals who are cognitively limited in their processing ability must index past action (take it for granted) so that they can act consistently while processing new information in the present context (Collins, 1981, p. 992).

Building on Garfinkel's work, Giddens (1984) developed a theory of action, which recognized human beings as knowledgeable agents who reflexively monitor the flow of interaction with one another. In other words,

Continuity of practices presumes reflexivity, but reflexivity in turn is possible only because of the continuity of practices that makes them distinctively

“the same” across space and time. “Reflexivity” hence should be understood not merely as “self consciousness,” but as the monitored character of the ongoing flow of social life. (Giddens, 1984, p. 3)

For Giddens, the historically influential characteristic of practice is only possible because actors reflexively monitor their present action, and thus link their current understandings of the world to past situations. This approach is similar to the one outlined by Bourdieu (1977) in his explanation of historical influences on action. Bourdieu did not depict practices as reactive in a behaviorist sense or norm-guided in a functionalist sense. Instead, he offered the view of practices as having historical momentum in the *habitus*, “a product of history [that] produces individual and collective practices—more history—in accordance with the schemes generated by history” (Bourdieu, 1990, p. 54). In other words, although respective of the role of human agency in constructing new practices and changing practices in line with shifting goal orientations, Bourdieu, like Giddens, recognized that work practices carry with them the history of previous work practices that have proven successful in the accomplishment of organizational life.

A number of studies of work practices show the importance of recognizing the historically influential character of situated action. Blomberg (1988), for example, showed that patterns of interaction among users had a major impact on people’s experience of their copiers. Importantly, information about how the machine worked, the sorts of problems it generated, and the advantages of its use were exchanged among users, key operators, and technicians. Thus, past action was made manifest in present practice and carried significant influence for users’ perceptions of the copier’s reliability and the ways in which they would conceive of using it in their daily work. More dramatic examples can be found in Vallas’s (2003) discussion of the failures of introducing teamwork practices into traditional pulp paper manufacturing plant or Edmondson and colleagues’ (2001) analysis of the rejection of new minimally invasive surgery practices into a number of cardiology departments at leading hospitals. In both cases, new work practices were rejected because the current practices of workers were so laden with historical values of employment, expertise, and occupational standing that it became impossible for members to think of adopting new work practices that did not align with the practices organizational members had always conducted.

Although the historical influence of practice is essential for the construction of a shared repertoire of action and thus the continued collaboration of a community of actors (Wenger, 1998), the fact that work practices are themselves a historical product of situational encounters can make it difficult for people to change them. Hutchins’s (1995) cognitive ethnography of the work practices conducted on the navigation bridges of U.S. Navy ships demonstrated that work practices evolve in response to historical contingencies. For example, the demands of being a quartermaster shift the way that navigation takes place through the use of ship logs, and the evolving practice of discerning ship

position and maintaining those logs changes the role of quartermaster. Over time, however, those situated contingencies change but the work practices that were formed in response to them still bear the legacy of past practice. Therefore, work practices run the risk of attempting to impose order on a world whose contours have changed. Sims (1999) demonstrated this issue in his discussion about how graduate students in earthquake engineering learn construction work practices from technicians with many years in the field. Many students, however, find that some work practices do not align with recent theory about quasi-static loads in cement reinforced structures. The consequence is that students' work practices are out of alignment with their perceptions of occupational norms, thus causing role discomfort and, occasionally, innovation in practice. Thus, as several scholars have suggested, work practices can become misaligned from the activities they organize (with both positive and negative consequences) when technologies, innovations, or markets change (Barley & Kunda, 2001; Jackson et al., 2002; Leonardi, 2009b).

Goal Oriented

One cannot understand practice without recognizing its orientation toward individual and organizational goals. Work practices are enacted and perpetuated within the context of organizations that actively pursue their own survival. Evolutionary theorists have for many years convincingly argued that if the practices of a community do not enforce or contribute to the organization's survival, those practices will be selected against (Anderson & Tushman, 1990; Monge, Heiss, & Margolin, 2008; Nelson & Winter, 1982; Sorenson & Stuart, 2000). Thus, one important characteristic of work practice is its goal orientation. Organizational members conduct work practices as they move toward the attainment of certain goals.

Pickering's (1993) analysis of Donald Glaser's work practices in elementary-particle physics demonstrated the importance that goal orientation plays in the construction and perpetuation of work practices. In the early 1950s physicists were having difficulty accumulating data on recently discovered and so-called "strange particles" using common instruments such as cloud chambers. In the midst of such difficulty, Glaser set himself an ambitious goal: "He wanted to construct some new kind of detector{ . . . }containing some denser working substance" (Pickering, 1993, p. 569). The issue Glaser faced was that for several years the different configurations he attempted failed to consistently register particle tracks. Despite such slow beginnings, Glaser's practice proceeded along what can be looked at retrospectively as a linear path. Glaser's eventual success at forming small bubbles along particle tracks, however, was anything but linear. The path of resistances he faced when confronted with the unpredictability of the material world were overcome by Glaser's consistent accommodation of his practices to deal with the unanticipated results occurring in his bubble chamber. Thus, the final solution to achieving an operable bubble

chamber was one that Glaser himself had not considered at the project's outset. As Pickering (1993) suggested,

Human agency has an interesting temporal structure that material agency lacks. It seems unnecessary, at best, to think that a bubble chamber has any future end or purpose in view when it produces tracks upon expansion. In contrast, one cannot understand Glaser's practice without recognizing its orientation to future goals. (p. 577)

Work practices, then, emerge out of actors' orientations toward specific goals.

The important point to be taken here is that explaining the trajectory of work practices requires an understanding of their evolution towards predetermined goals. In his study of scientific work in a biochemical laboratory, Lynch (1985) described the great deal of time scientists spend trying to "make it work," to carry out an experiment in order that the expected outcome is produced (pp. 115–140). To achieve this end they need certain skills that can only be acquired through their involvement in recurrent practice. That is, goals can be laid out in advance, but the work practices that lead toward those goals themselves evolve as actors encounter new material constraints on their work, as they learn new skills to overcome or work around those constraints, and as they adapt their own practices to meet such goals. This is precisely the patterns followed by the organ procurement coordinators studied by Hogle (1995) who were charged with facilitating transplant donations from potential donors. Despite standard criteria for what sorts of individuals counted as acceptable donors, shifting orientations toward the goals of their work meant that, in practice, the notion of acceptability was itself negotiable. In some months coordinators had a donor shortage they needed to make up, other months there were particular patients waiting for certain organs. In these circumstances, the goals of the donation process shifted such as to allow coordinators to reconsider their standard criteria and adapt their work practices.

What Role Do Work Practices Play In the Process of Organizing?

Having spent some time considering the characteristic features of work practices I now turn to the issue of the *work* work practices do in organizations. As Williams (1983) pointed out, work is "our most general word for doing something and for something done." However, as Williams and other have suggested (Barley & Kunda, 2001; Orr, 1998; Wadel, 1979), work is typically defined as a noun—something that is done—as a relationship of employment or as a set of activities that are sold on the market for a price. By contrast, I focus on work as an action and as work practices as primary performances through which organizing is accomplished. From this vantage point, I identify three types of roles that work practices play in the process of organizing: an instrumental role, a communicative role, and a constitutive role.

Instrumental Role

Perhaps the most basic role that work practices play in organizations is one that is often overlooked by researchers: Their instrumental role. Work practices (the way things are done) act as a means to accomplish work (the things that need to be done). Keeping their instrumental role in mind helps researchers to remember the goal-oriented and temporally emergent character of work practices.

The earliest studies of work focused directly in on the instrumental nature of practice. Taylor (1911/1998), Gilbreth (1911/1993) and others were quite concerned with how the practice of work was carried out to improve the performance of routine tasks. Despite the importance of the work organized by work practices, most researchers look to the form rather than the content of work practices. In other words, they focus on the symbolic and performative nature of practice (Henderson, 1998; Orlikowski & Gash, 1994; Prasad, 1993; Trujillo, 1992; Whittle & Spicer, 2008) while overlooking the actual tasks that get done through the enactment of work practices. There are, however, a number of studies that do consider the instrumental role of work practices. Barley (1986), for example, described the work practices of radiologists and technicians around the implementation of a new CT scanner in two hospitals. Members of these two occupational communities came together around the practice of scanner operations and interpretations of results. Although Barley spent a great deal of time discussing the symbolic nature of work practices (the embedded nature of occupational jurisdiction in certain forms of work), his detailed ethnographic approach provided data on the mundane practices that were directed at the operation of the scanner and the interpretation of the results it produced.

Latour and Woolgar's (1979) discussion of the laboratory work practices surrounding the identification and subsequent knowledge generation of a new chemical substance also demonstrated the instrumental nature of practice. Research scientists in two different laboratories engaged in a number of work practices to identify a chemical that could be used in tests to screen for malfunctions of the pituitary. Although Latour and Woolgar detailed the types of practices that helped to produce and reify the discovery of Thyrotropin Releasing Factor (TRF) as a taken-for-granted chemical compound, such work practices must be seen at the most basic level as directed toward the construction of this scientific fact.

Several other studies—such as Pentland's (1992) analysis of call center technician's work, Orr's (1996) discussion of the work practices of copy machine technicians, and Treem's (2013) observations of public relations work practices—are noteworthy for their continued focus on the sorts of tasks that engagement in work practices aims to accomplish. Such studies inadvertently demonstrate that it is easier to focus on the instrumental nature of work if the research situates him or herself in only one empirical context. Other studies that have attempted to draw more general characterizations of work practice by comparing work across two or more communities (Barley, 1996; Knorr-Cetina,

1999; Neff, 2012; Orlikowski, 2000) have had a more difficult time staying focused on the instrumental nature of work practices. Instead, in examining practice across empirical sites, researchers often drift away from the historically influenced and temporally emergent characteristics of practice and seek to identify those roles played by work practices that transcend the idiosyncrasies of any particular context (e.g., the communicative and constitutive roles discussed later). I make this observation not to point to the shortcomings or strengths of any particular approach but rather to illustrate the difficulty of explaining all the roles that work practices play in one study. That said, work practices are carried out in order to do work. Understanding what that work is in some detail is important for building a clearer conceptualization of why work practices then take on the communicative and constitutive characters they do.

Communicative Role

In addition to their instrumental role, work practices also play a communicative role in the process of organizing. A basic insight of communication and symbolic interactionist researchers is that the actual enactment of work serves more than an instrumental function, it communicates to other individuals the type of work one should do, how that work should be done, and the value of working in some ways over others (Blumer, 1969; Craig, 1999; Deetz, 1994; Mead, 1934). In other words, work practices are themselves communicative acts shared among members of an occupational or organizational community.

Working in a certain way then becomes the basis for communal membership in that the conduct of certain work practices communicates to others that a person knows how to be a competent cultural member. This is because what is taken to be proper conduct in any occupation or organization stems not from the exigencies of particular tasks but is instead constructed through the social production of meaning amongst individuals (Becker et al., 1961; Hughes, 1958; Reichers, 1987; Van Maanen & Schein, 1979). A view of work practices as communicative in nature coincides with the work of theorists who suggest that the most widely characteristic feature of an occupational culture is the style in which members work (Becker & Carper, 1956; Schein, 1996; Van Maanen & Barley, 1984; Watson, 1958). Nelsen and Barley (1997) suggested that a definition of work practice that represents the particular style in which members engage their work and each other provides an important entry point into the inner-working of occupational communities precisely because: “Behaving consistently within an ideology of practice is necessary for a group to promulgate successfully its perspective on the cultural definition of an activity” (p. 639). Giddens (1984) also suggested that those actions of a community that come to have a “taken-for-granted character” are those “familiar styles and forms of conduct, both supporting and supported by a sense of ontological security” (p. 376). Therefore, it is not necessarily the content of a particular action (like I suggested in the previous section) but the way that action is carried out that defines membership in an occupational or organizational

culture (Cheney & Ashcraft, 2007; Eisenberg & Riley, 2001; Kunda, 1992; Pacanowsky & O'Donnell-Trujillo, 1983).

Such a recognition of the communicative role played by work practices helps to replace static notions of social structure with the dynamic concept of performance. As Goffman (1959) indicated nearly fifty years ago, performances are the actions through which individuals bring to completion a sense of reality. Because work practices are communicative actions that individuals themselves use to make sense out of their communal membership (Stohl, 1986) and that others use to evaluate whether they are indeed a member or not (Leonardi, Jackson, & Diwan, 2009), they act as affordances, enabling individuals to engage in the instrumental practice of their work, and, at the same time, they act as constraints on human action, delimiting the possible activities in which they believe they can or should engage. Watson (1958), suggested a number of years ago that to understand why occupational members worked in similar ways despite their individual differences, researchers needed a concept that would show how collective orientations were formed with which to interpret the wide variety of tasks workers normally conducted:

The work style requires segmental presentation of self in which each individual demonstrates his competence and success in a restricted area defined by the job{. . .}the characteristic style is what may be called culture building, in which individuals join together to create and maintain a world of special meanings.{. . .}In this case, the individual dramatizes that part of himself which overlaps with the group culture. (p. 271)

In this sense, work practices represent a specific “style” of working and are best understood as specific orientations toward tasks and to other workers. In Watson’s view, each individual brings his or her own personal attributes to a situation, but those dispositional tendencies are modified, revised, and exert varying degrees of pressure on the situation as the work practices of a community influence the actions of individuals through their communicative power. Orientations become shared amongst individuals as occupational members present their attributes that are most similar to those dominant among their peers and hold in reserve those that are not. This selective presentation of personal attributes is what Watson termed the “segmental presentation of self.” These shared orientations then serve as portable filters that are used to interpret and respond to new situations.

Kunda’s (1992) analysis of engineering culture in a large computer firm demonstrates this communicative role played by work practice. Engineers who worked late (a work practice) and forwent family events to meet deadlines (another work practice) produced and perpetuated the value of dedicating one’s self to the company. Such actions communicated to new and long tenured employees that Tech valued the commitment of its employees. This culture of commitment at Tech was easily identifiable by Tech’s employees, employees at competing firms, vendor firms, and the families and friends of employees.

Thus, the continued conduct of work practices or the creation of new ones can be seen as a response to the reflexive monitoring enabled by their communicative nature.

Constitutive Role

A third role that work practices play in the process of organizing is a constitutive one. During the past quarter century the field of organization studies has seen a turn from fixed and static view of organizational structure to notions of structure as constituted by the micro-practices of organizing. Such views are emphasized in Strauss's (1978) explication of negotiated order theory, Weick's (1979) description of enactment, Collins's (1981) strategy of micro-translation, Giddens's (1984) discussion of the structuration process, and even Bourdieu's (1990) theory of practice. All of these perspectives argue that those abstract forms normally called structures or cultures are really nothing more than an interlocked sequence of repetitive practices. Thus, it is through the continued production and reproduction of micro-level practices that we come to see particular patterns as organizing.

In such models, work practices play a constitutive role. That is, they are the building blocks upon which organizations are constructed. Indeed, most studies of work practices in organizational contexts have focused on their constitutive role (Eisenberg & Riley, 2001). As Barley and Kunda (2001) suggested,

If one conceives of an organizational structure as the pattern that emerges from real interactions among people, it is possible to link shifts in work practices directly to changes in organizational structure by examining properties of social networks. (p. 89)

Similarly, Feldman and Pentland (2003, 2005) have discussed the ostensive and performative aspects of work in organizational routines. The authors argue that the work that occurs in organizational routines is performative in the sense that it is historically influenced and temporally emergent practice performed in response to localized exigencies. But in the aggregate, these local performances also have an ostensive aspect: They produce a set of understandings about what the world is and how it works that exists outside of the realm of practice.

This discussion leads to a second important point about the constitutive nature of work practices: the reciprocal relationship they have with the structures, cultures, or ostensive routines they create. The social phenomenological approach outlined by Berger and Luckmann (1967) suggested that certain work practices become institutions—appear objective and external—because individuals come to see actions as seemingly immutable facts imposed on them by the outside. This conceptualization lifted the notion of work practices out of the practical order described by Garfinkel (1967) and argued that although institutions are constituted in the everyday actions of cultural membership (as explicated by the ethnomethodological approach) they also are seen by those

members to exist independently of them. An important insight that emerges from this work is that of the dialectic. The authors argued that the products of human action often act back on the very humans who produce them. In such a view, the relationship between institution and action is reciprocal rather than causal: Cultural institutions are constructed and perpetuated through microsocial practices, but culture also influences those practices. The relationship is also transparent such that practices are seen to exist independently of human creation. This creates what Berger and Luckmann (1967) term “objectivated human activity” and the “paradox that man is capable of producing a world that he then experiences as something other than a human product” (pp. 60–61).

Giddens (1984) added to the notion of the dialectical relationship between action and institution the insight that members of a particular culture are aware of the institutions that surround them (their communicative role). Importantly, this awareness prompts individuals to either modify their behavior to coincide with the existing work practices or purposefully alter their behavior to reject them.

In addition to their instrumental and communicative roles, work practices also constitute social structures that appear to exist apart from their perpetuation by work practices. As I have described them, the roles played by work practices in organizational settings do not occur in isolation from one another. In fact, their mutual reinforcement is what allows the multivocality of their role performance. That is, because there are instrumental reasons to use work practices, such practices are recurrently enacted and can serve as communication media for others. Further, because work practices are communicative in nature, members can reflect on them as they produce a certain social structure and thus purposefully chose to align their actions with the cultures their work practices create and perpetuate.

How Do We Build Theory From Empirical Studies of Work Practices?

The foregoing sections have discussed a number of empirical features of work practices. I have described work practices as goal oriented, historically influenced, temporally emergent, materially bound, and recursively enacted. I have also reviewed a number of ways that work practices do work in organizations, namely through their instrumental, communicative, and constitutive functions. Due to their situated, contextually specific and improvisational nature, it seems difficult to build general theory about work practices that transcend the idiosyncrasies of those cultural contexts in which they are enacted and have performative force. Indeed, many studies of situated action have taken an avowedly anti-theoretical stance toward generalizing about work practices (Heath & Luff, 2000; Lave & Wenger, 1991; Suchman, 1987). Instead, these researchers have suggested that the situated nature of work practices means that one can only understand the content of organizational action through detailed ethnographic explorations into specific cultural contexts. I agree wholeheartedly

that the ability to specify the form and function of work practices requires tremendous emic insights, but I also submit that a conceptualization of practice as space and action might help to use the empirical insights generated by such research to build more general theory about the role of work practices in the process of organizing.

Practice as Space and Action

As I have discussed above, most extant studies of practice have tended to conceptualize work practices as those actions members take in the accomplishment of organizational goals. Clearly, thinking of work practices as dynamic and active helps to foreground the notion that organizations are produced, perpetuated, and changed through the enactment of work practices that. In addition to this view of work practice as action, I offer a view of work practice as space. In other words, practice is a space in which action takes place. This conceptualization gives work practices a dual role: They are generative in the sense that they are actions that produce organizations, but they are also contexts in and of themselves that allow action to occur.

Consider for example, Pickering's (1995) discussion of Glaser's attempt to build a successfully functioning bubble chamber:

Glaser had to find out, in the real time of practice, what the contours of material agency might be. { . . . } There is not real-time explanation for the particular patterns of resistance that Glaser encountered in his attempts to go beyond the cloud chamber. In his practice, these resistances appeared as if *by chance*—they *just happened*. It just happened that, when Glaser configured his instrument this way (or this, or this), it did not produce tracks, but when he configured it that way, it did. (pp. 52–53)

Glaser's practice was a space where he attempted to combine the material properties of elementary particles with his own agentic goals of building a device to capture them. Only in this space of practice could the action of combination could occur. The copy repair technicians observed in Orr's (1996) study operated in a similar space of practice. They used specific work practices such as conversation with users and replication of problems to elicit the undesired material function of the copiers. In this space of practice technicians could develop the knowledge necessary to provide solutions to common problems. Feeling where certain parts inside the machine had worn down and watching paper jam between layered rollers allowed technicians to develop new knowledge about the problems and to devise solutions to them. We can say that in the space of practice the material functioning of the copier and the theoretical knowledge about how copiers worked came together for technicians. Out of this space of practice they were then able to develop new actions (work practices) that reflected their contextually created knowledge.

Although these two studies illustrate the notion of practice as a space, they are focused on the intertwining of material and social phenomena in the context of machines. Other studies that have dealt with learning and knowledge have shown how the material and social are connected absent any explicit machine behavior. Lave and Wenger (1991) attempted to recast the notion of apprenticeship as a practical action. The authors suggested that knowledge arises in a realm of practice. That is, in the space in which new recruits begin to perform certain actions they create contextually specific knowledge about how and why work is conducted as it is in certain communities. Among the number of empirical cases of apprenticeship they cite, Lave and Wenger discuss how newcomers to Alcoholics Anonymous (AA) learn to construct their identity as a non-drinking alcoholic through their engagement in communal practice. Attending speaker meetings and telling one's story helps newcomers make the eventual transition into old-timers. As the authors describe, newcomers learn what AA is all about and how to see themselves as non-drinking alcoholics through the practices of storytelling, of saying something once and being explicitly or implicitly told not to say it again, or encouraged to elaborate what was once a small part of a story into the main focus:

Early on, newcomers learn to preface their contributions to A.A. meetings with the simple identifying statement, "I'm a recovering alcoholic," and shortly to introduce themselves and sketch the problem that brought them to A.A. They begin by describing these events in non-A.A. terms. Their accounts meet with the counterexemplary stories by more-experienced members who do not criticize or correct new comber's accounts directly. They gradually generate a view that matches more closely the A.A. model, eventually producing skilled testimony in public meetings and gaining validation from others as they demonstrate appropriate understanding. (Lave & Wenger, 1991, p. 106)

In this example, practice is the space in which knowledge and identity are constructed. The space allows for the conduct of certain actions that will then produce a certain organization of knowing in the world.

This discussion of AA members is quite similar to Orlikowski's (2002) exploration of the enactment of performance practices in a successful global product development company. Orlikowski discussed how, in the space of practice, organizational members combined insights they generated through the product development process with the goals of the organization to form certain actions in which knowing can be communicated to others. As Orlikowski framed it, the actions that produce knowing are generated from a space in which individual's real-time experiences with the product development process can be combined with their insights about the functioning of the organization. In other words, in the space of practice, practical action is generated.

Getting Into the Space of Practice to Watch Practical Action

If, as I have discussed thus far, work practice is not only the action by which tasks are accomplished but also a space in which the material demands of the world can be integrated into the realm of human agency then to build theory about work practice researchers must enter this practical space. The problem with much contemporary research on work practice is that conceptualizations of work practice as action confines discussion about generative power to localized settings. In other words, by focusing on the content of work practices—what they look like—it is often difficult to build a theory of practice that will allow comparison across diverse contexts. If, however, researchers can begin to think of practice as a space, understanding how and why practices are generated in the first place will take on an important role. Put another way, studies that attempt to answer questions like, “What kinds of work practices develop within a community?” will be limited in their ability to build theory. Instead, researchers must ask, “Why do certain practices develop in a community?” The answer to such a question must involve, at least in some tangential way, the various characteristics of practice I identify above. The more important point here is that answering this question requires that researchers first conceptualize practice as a space in which various material and social phenomena become intertwined and second, that they enter this space to learn how those practices develop in the first place.

After understanding why certain practices develop as they do, researchers can then begin to ask, “What do these practices do?” Again, here I have offered three possibilities for the role practices play in the process of organizing. Thus, thinking about work practice as both space and action may help to lead to insights that are not idiosyncratically based but that produce knowledge about the mechanisms through which organizing is accomplished.

Empirically, this means that researchers must “get inside” the space of practice to understand the action of practice. Ethnographic research provides one avenue for such discovery since the basic epistemology of the method is that knowledge is generated about individual’s practices by “getting inside” the interpretations of insiders. To actually get inside the space of work practices will require researchers to focus their efforts in several directions.

Conduct longitudinal research. To understand how work practices are produced, maintained, and dissolve, as well as how their conduct constitutes the organizing process requires observation over time. Consequently, communication researchers must track the conduct of work practices longitudinally. As I have discussed, static studies that map the occurrence of change demonstrate what work practices communities of actors engage in but do not demonstrate the dynamics by which those changes occur. For researchers to be able to demonstrate how the interplay of social and technical forces engender changes in organizational life seems to require a minimum of six to eighteen months of study (Barley, 1986; Latour & Woolgar, 1979; Leonardi, 2012; Orlikowski, 2002). To

expand the scope of study and examine the relationship between work practices and organizational change requires even more extended observation—perhaps over three years (Thomas, 1994). For many researchers this commitment to time will surely be off-putting. However, the need to understand not only how but why work practices (a) sometimes become institutions in a community and other times do not; (b) sometimes alter the organization in anticipated ways and other times bring about a number of unanticipated outcomes; and (c) sometimes have positive and other times have detrimental effects on the functioning of an organization is of tremendous concern for both organizational theory and management practice.

This argument for a longitudinal approach to studies of work practice is based on two primary assumptions. The first assumption is that the most trenchant insights about social systems are generated by watching people do things. Although interviews are helpful to explain the progression of events and people's interpretations of their own actions and others, their actual conduct of work is the most revealing source of data that an ethnographer can collect about the contours of a social system. Although individuals' actions produce and perpetuate a social system, they are also influenced by it. Therefore, observing what actions people take to complete their work, when they take those actions, and how those actions are performed not only provides a descriptive understanding of how people work, but it can also help to explain why they work in these ways.

The second assumption is that an informant who is being observed in an organizational context performs certain actions because she believes such actions are necessary to fulfill her work role. In this sense, people's actions don't lie. Although an informant may inadvertently or even purposefully alter his or her actions when under the watch of the ethnographer, people are notoriously bad at maintaining a façade for long. They are bad at it because trying to perform actions in ways that violate a normal routine often proves to be too much a cognitive load for people to handle (Louis & Sutton, 1991) and because, at some point, they have to get their work done, and thus cannot afford to dissimulate their practice for long (Roy, 1959). The upshot, is that even they know they are being watched, people act in ways that they have to get their jobs done. Becker (1996) provides a compelling example:

When we watch someone as they work in their usual work setting{. . .}we cannot insulate them from the consequences of their actions. On the contrary, they have to take the rap for what they do, just as they ordinarily do in everyday life. An example: when I was observing college undergraduates, I sometimes went to classes with them. On one occasion, an instructor announced a surprise quiz for which the student I was accompanying that day, a goofoff, was totally unprepared. Sitting nearby, I could easily see him leaning over and copying answers from someone he hoped knew more than he did. He was embarrassed by my seeing him, but the embarrassment

didn't stop him copying, because the consequences of failing the test (this was at a time when flunking out of school could lead to being drafted, and maybe being killed in combat) were a lot worse than my potentially lowered opinion of him. He apologized and made excuses later, but he did it. (p. 62)

In fact, most field researchers seem to agree that when they are in their work setting even those informants who prove most theatrical after meeting the researcher slip back into their normal set of actions after about thirty minutes of observation. Thus, long, repeated stints of observation can reliably capture the normal and routine actions informants conduct to accomplish their work.

Based on these assumptions, Becker and his colleagues (Becker, 1958; Becker et al., 1961) have demonstrated the usefulness of what I term an *action approach* toward longitudinal data collection and analysis. Such an approach takes as its primary unit of analysis the actions that informants take in the conduct of their work. Actions are small but concrete types of behaviors. Reading an error message from a computer screen is an action; calling someone on the phone is an action; placing an accelerometer on a model is an action; and submitting a math-model to a solver is an action. Actions can be observed directly and recorded through the use of field notes. Once they are in written form they can be read, their text can be pointed to, and they can be given a code. Concrete actions can be grouped together into events, or the collection of multiple smaller actions (Becker et al., 1961). Thus, the actions of picking up a piece of paper and calling someone on the phone can be grouped into a trying-to-discover-why-a-model-bombed-out event just as the actions of placing an accelerometer and submitting a model to a solver can be grouped into a pre-processing-a-model event. These events can then be submitted to the types of analysis techniques (e.g. Strauss & Corbin, 1998) that allow the researcher to understand why they occur, what their consequences are, and what other events they connect to.

What is the point of such a detailed coding of actions? Triangulation. Becker (1958) suggested that if observations are coded at the level of actions they can be standardized in a form "capable of being transformed into legitimate statistical data" (p. 656). Counting the number of actions taken by informants in the course of their work can be a simple way to triangulate the findings made through the qualitative interpretations of the data. For example, as he began to sort his data in a qualitative manner, Barley (1990b) noticed a subtle shift in the interactions among his informants. The analysis seemed to suggest that the new computerized imaging modalities he had watched informants use were shifting the power relations among actors in the social order of the two hospitals he observed. By counting identifiable actions from his notes (e.g. "usurping the controls" or "giving someone directions"), Barley was able to verify quantitatively the insights generated by his qualitative sorting of the data (Barley, 1986, 1990a).

Although an action approach to data analysis can allow the analyst to sum qualitative data in quantitative form, which can help to confirm or disconfirm the theories emerging from the analysis, it can also help to reveal more subtle and consistent patterns in the data. By coding specific actions from the data, the analyst can construct data matrices that can be submitted to statistical analyses. For example, using simple tests such as an analysis of variance can help to determine whether actions occurred more frequently in one period than another or whether they were conducted more consistently by one group than another. Thus, by coding actions, longitudinal researchers can triangulate the descriptive and inductive findings of qualitatively coded data with simple quantitative analyses of frequencies that may help to uncover patterns in the data that would otherwise be lost to the analyst due to the data's sheer volume. This is exactly the tactic taken, for example, in Poole and DeSanctis's (1992; DeSanctis & Poole, 1994) brilliant longitudinal work on group decision support system use, which led to their theory of adaptive structuration.

Examine links between macro and micro. Everyday work practices are both enabled and constrained by the formal structures and procedures of the organization. However, they also produce and perpetuate those very forms that constrain them. What the literature reviewed has consistently demonstrated is that development and change of work practices are associated with micro-level social practices and reinforced or mitigated by macro-level organizational responses to them. Therefore, to understand how and why organizations take the shape they do, future research must alternate between a focus on features of the macro-organizational structure and a focus on the micro-practices that produce and change that structure. This is a difficult task. Several authors have argued for certain pivotal concepts that help researchers look simultaneously at both. Barley (1990a) has argued for roles and networks as such concepts, DeSanctis and Poole (1994) have suggested that norms might fulfill this function, and Feldman and Pentland (2003) have suggested that researchers pay closer attention to routines.

The identification of additional pivotal concepts for explaining how macro-level structures affect micro-level practices, which in turn alter macro-level structures, will help to highlight the constitutive role of work practices in the production of organizations and to demonstrate more effectively how an organization sets its own conditions for the effect that a new work practice will have on it.

The problem with such integration, however, is that scholars who adopt macro level approaches to the study of work practice often proffer deterministic accounts of how and why people work they way they do, and what effects those ways or working have on organizing, while scholars who adopt micro level approaches tend to adopt social constructivist views (Leonardi & Barley, 2010). The answer to the question of whether work practices are emergent and idiosyncratic responses to local exigencies, or whether they are shaped by forces outside the control of the people who conduct them may well depend on

the level of analysis and the time frame from which researchers choose to work. Historians of science have grappled with this issue in their examinations of the development and use of technologies. Misa, for example, (1994) noted that determinists and social constructivists typically draw evidence from different levels of analysis to construct their arguments:

machines make history when historians and other analysts adopt a 'macro' perspective, whereas a causal role for the machine is not present and is not possible for analysts who adopt a "micro" perspective. { . . . } Besides taking a larger unit of analysis, macro studies tend to abstract from individual cases, to impute rationality on actors' behalfs or posit functionality for their actions. { . . . } Accounts focusing on these "order bestowing principles" lead toward technological, economic or ecological determinism. Conversely, accounts focusing on historical contingency and variety of experience lead away from all determinism. Besides taking a smaller unit of analysis, such micro studies tend to focus solely on case studies, to refute rationality or confute functionality, and to be disorder-respecting. (pp. 117–119)

Misa argued that resolving dilemmas of determinism and materialism by privileging one level of analysis over another is not only empirically dissatisfying, it allows analysts to sidestep important issues.

Scholars who champion voluntarism and idealism by insisting on micro-level data are "forced to omit comment on the intriguing question of whether technology has any influence on anything" (Misa, 1994, p. 138). The claim that technology exerts no socially significant material force on the direction of society is not only inconsistent with everyday experience, but, as Misa noted, it "seems especially undesirable in an age of pervasive socio-technical problems" (p. 138). Social constructionists, therefore, risk assigning technology too little role in making history. Determinists, on the other hand, either risk creating the image of an autonomous social process that lies beyond human awareness or imputing motives and intentions without the warrant of evidence. Thus, the worldview of a determinist (whether materialistic or idealistic) too easily reduces humans to cultural and social dupes. Misa argued that a more plausible stance lies in the middle ground between determinism and voluntarism, where constraints and affordances both exist. This middle ground, which Misa called the *meso level*, is populated by institutional actors:

For historians of technology and business this means analyzing the institutions intermediate between the firm and the market or between the individual and the state. A short list of these include manufacturers' organizations (including cartels and interfirm networks), standard setting bodies (including the engineering profession and public agencies), export-import firms specializing in technology transfer, consulting engineering firms and investment banking houses. (p. 139)

Institutions are critical in Misa's view because they represent social mechanisms by which one group's volition can be translated into another group's constraint. As I have shown, most studies of work practices adopt social constructivist orientations and, thus, have concentrated on dynamics at the microsocial level. As a result, this body of work might lead one to conclude that work practices lead to unique and unpredictable forms of organizing. Such a conclusion is problematic because, if taken seriously, social constructionists cannot speak to how the same or similar work practices occasion similar outcomes across organizations.

Misa points to a way out of this dilemma: Look at the varying impact of social and material forces at different levels of analysis. As Misa points out, the relevant actors who move across these levels or analysis are likely to be professionals, consultants, and other occupational members who move across organizations and work contexts. Communication theorists who have begun to focus on how professionals shape and are shaped by practice (Cheney & Ashcraft, 2007; Lammers & Garcia, 2009) may be sowing the seeds for the kind of cross-level analyses that will allow students of work practices to elide distinctions between deterministic and social constructivist views on the antecedents and outcomes of work.

Use alternative theories. One of the enduring strengths of organizational communication research is that it is populated by a number of theories that illuminate various processes that would remain obscure were it not for a multiplicity of lights shining down upon it (Deetz, 2001; Hatch, 1997; Scott, 1998). The same can be said for research on work practices. Up until this point, the vast majority of studies have used ethnomethodology (Garfinkel, 1967) or structuration theory (Giddens, 1984) as interpretive lenses for understanding work practices in the process of organizing. The use of these perspectives is certainly warranted, as they take as their central task the explanation of the relationship between the micro and the macro through a discussion of agency and structure. However, an over-reliance on one or two theoretical models, or slight variations thereof, runs the risk of generating research that has little value-added. Additional perspectives can help to generate new findings and surface new solutions to old problems.

This point is demonstrated by several of the empirical studies reviewed above. For example, Fulk (1993) combined social information processing theory with social learning theory to show how social influence practices led individuals to perceive the utility of a new technology in-line with members of their work groups. Barley (1986) drew on insights from both structuration theory and negotiated order theory to understand how work practices changed in the context of a new technology implementation. Structuration theory's emphasis on cumulative effects and negotiated order theory's emphasis on recurrent social interaction resulted in a more complete understanding of the structuring process. Theories that take both agency and structure seriously in constructing accounts of work practices make good candidates for adoption.

Institutional theory (DiMaggio & Powell, 1983; Lammers & Barbour, 2006), critical-interpretive theory (Alvesson & Deetz, 1999; Mumby, 2005), and critical realism theory (Bhaskar, 1979; Maxwell, 2012) seem most immediately suitable for this purpose.

Institutional theory may help expand studies of work practices in organizations because its specification of institutions that transcend specific practice helps to locate and situate work practices in a broader normative order. Practice theorists have often had difficulty speaking to the entwining of power and practice because most have focused on interaction in the here-and-now to highlight emergence in its various forms (Nicolini, 2012). This strategy enables practice theorists to speak to how local political negotiations shape the development of local routines or what one might call micro-institutions (Powell & Colyvas, 2008) but at the cost of allowing more macro-institutions, such as relations of production and distributions of power, to slip into the background. Powerful actors are generally more interested in maintaining or changing the global institutions of a social order and less concerned with the specific routines by which work is accomplished. Consequently, it is plausible that technologies can significantly alter routines and patterns of interaction, while posing no challenge to the larger institutional order. For example, institutional theorists have long sought to determine why organizations are so similar. Like practice theorists, they have also foregrounded the role that interpretation and symbolism play in the emergence and diffusion of organizational structures and work practices. In fact, Zucker (1977), Meyer and Rowan (1977), and DiMaggio and Powell (1991) specifically turned to Berger and Luckmann's *Social Construction of Reality* (1967) for the microsocial foundations of their institutionalist agenda. Berger and Luckmann were interested in how subjectivity was transformed into objectivity. They rooted the construction process in emergent interactions and interpretations that became habitualized at a local level and then diffused across actors and contexts to become taken-for-granted social forms. Taking Berger and Luckmann's perspective, one can argue that studies of work practices have concentrated on the early phases, while institutionalists have focused on the later phases of social construction. In other words, while practice theory studies of work practices have paid most attention to how similar work practices can occasion distinct cognitive, communicative, and network structures, institutionalists have often concentrated on explaining how structures that have already emerged elsewhere diffuse (e.g. DiMaggio, 1991; Jepperson, 1991; Owen-Smith & Powell, 2004; Scott, 2004; Strang & Macy, 2001). To link these perspectives as Berger and Luckmann might have envisioned would require a theoretically nuanced account of how emergent and heterogeneous work practices conducted by in individual organizations become homogeneous, such that they can diffuse across organizational fields.

Critical-interpretive theorists who explore the way that language influences practice often treat organizations as discursive constructions where discourse, which represents the language people use in everyday talk, constructs *discourse*, or an ideological orientation that undergirds the process of

organizing (Alvesson & Kärreman, 2000; Fairhurst & Putnam, 2004). Within such a conceptualization, the discourse occurring in everyday interaction produces a *discourse* that shapes individuals' understandings about the relationship between objects in the world and influences their subsequent action (Phillips, Lawrence, & Hardy, 2004). As critical-interpretive theorists argue, *discourse* is always the outcome of some degree of struggle over parties with varying interests (Alvesson & Deetz, 1999). In the realm of work practices, there are at least two important parties with distinct interests: individuals who conduct the work practices in the course of their normal work roles hope to use technology inline with cultural values to maintain cognitive consistency (Waisbord, 1998; Yoon, 2001); and managers, on the other hand, who often wish to standardize and control practices and hope for consistency in the way people work (Tractinsky & Jarvenpaa, 1995). Thus, the conduct of work practices could, from a critical standpoint, be seen as a struggle to establish the *discourse* that will order and naturalize the world in a particular way. If language constructs reality, then in the political process of reality construction leveraging a discourse that renders one's conception of the world as uncontestable will ensure a groups' ability to frame the debate. As Deetz (1996) explained:

Either explicit or implicit in critical work is a goal to demonstrate and critique forms of domination, asymmetry and distorted communication through showing how social constructions of reality can favor certain interests and alternative constructions can be obscured and misrecognized. (p. 202)

Whether recognizing the potential outcomes of their actions or not, managers often do use a discourse that enforces a correct way to perceive and relate to the world. Deetz (1992) suggested that such discursive moves work to socially construct reality precisely because perceptual experience is primary. In other words, "on the basis of their perceptions, human beings make judgments, decide courses of action, develop feelings and make claims about the nature of reality" (Deetz, 1992, p. 115). Alvesson (1993) made a similar argument, noting that one of the primary methods through which managers attempt to gain purchase over the meaning-making process is through perceptual control. As Alvesson suggested, perceptual control is quite powerful because it is not targeted at shaping beliefs about what is good and what a person should strive toward (e.g., evaluate claims about a technology) but is aimed at shaping beliefs about what exists and how things are (e.g., the inevitable outcomes of technology). Using *discourse* as a control mechanism at the level of perception is powerful because it influences the social construction process. In other words, instead of waiting until after meaning is formed and attempting to influence meaning through persuasive campaigns, *discourse* often plays on perceptions as the primary experiential interface

with the world in a way that makes certain relationships appear natural and uncontested. In Mumby's (1989) words, creating a *discourse* that shapes individuals' perceptions "invokes a complex system of power structures that inscribe and position individuals in particular ways and with certain constraints and possibilities on their activities" (p. 303). Certain *discourses* about work practices may socially construct people's orientations toward their work precisely because they close off cultural antecedents to the social construction process by making the indeterminate and emergent nature of work somehow formulaic or inevitable.

Critical realism is a philosophical stance that recognizes the potential existence of a reality beyond our knowledge or conscious experience (Bhaskar, 1979). Phillips (1987) summarized this stance as "the view that entities exist independently of being perceived, or independently of our theories about them" (p. 205). That some structures are only experienced through human action does not make these structures any less real—existing apart from humans and their perceptions—and the influence of structure is not dependent on individuals explicitly recognizing it (Fleetwood, 2005). As Ackroyd and Fleetwood (2000) have noted, "Since our knowledge is bound up with our conceptions or even our discourse, it is easy to end up implicitly and illicitly concluding that all that exists are our concepts or our discourse" (p. 6).

One fundamental idea in critical realism that may, at the outset, concern students of work practices, especially those with constructivist leanings, is the critical realist's invocation of the term reality. However, critical realism does not suppose that there is one true reality out there waiting to be found. As Putnam (1999: 9) argued:

The notion that our words and life are constrained by a reality not of our own invention plays a deep role in our lives and is to be respected. The source of the puzzlement lies in the common philosophical error of supposing that the term "reality" must refer to a single superthing instead of looking at the ways in which we endlessly renegotiate—and are forced to renegotiate—our notion of reality as our language and our life develop. (p. 9)

This conceptualization of reality has strong parallels to symbolic interactionist thinking. As Herbert Blumer, who combined an ontological realism with an empirical constructivism (1969) argued:

the empirical necessarily exists always in the form of human pictures and conceptions of it. However, this does not shift "reality," as so many conclude, from the empirical world to the realm of imagery and conception. . . . [This] position is untenable because the empirical world can "talk back" to our pictures of it or assertions about it—talk back in the sense of challenging and resisting, or not bending to, our images or conceptions of it. (p. 22)

Most critical realists hold that mental states and attributes (such as meanings and intentions), although not directly observable, are part of the real world. In other words,

while critical realism rejects the idea of “multiple realities,” in the sense of independent and incommensurable worlds that are socially constructed by different individuals or societies, it is quite compatible with the idea that there are different valid perspectives on reality. (Maxwell, 2012, p. 9)

Applying this critical realist view to considerations of the study of work practices points communication scholars to consider two analytical assumptions: (a) that structure logically predates the actions that transform it and (b) that structural elaboration logically postdates those actions. Such a position leads to calls for students of work practices to enact an “analytical dualism” that treats the structural and action-based components of work practices as interacting while all the while remaining distinct from one another (Archer, 1995). In other words structures can be viewed as intransitive, or existing without an identifiable object at which they are directed (Archer, 2000). Within a morphogenetic approach to critical realism, structures can be then be analyzed separately from the actions that bring them into existence, and sustain them through elaboration, reproduction, or transformation. Such a view may help to shed light on why certain work practices do emerge, why others do not or cannot, and under what circumstances work practices are likely to sustain or alter the way an organization is structured.

Conclusion

In this paper I have made an attempt at providing some conceptual clarity on the concept of work practices. Our review of studies across disciplines as diverse as organization studies, sociology, communication, computer-supported cooperative work, management, information systems, and science studies has surfaced a number of common characteristics that can be said to define a work practice. I have also suggested three overlapping roles that work practices play in the process of organizing—the work that work practices do both for organizational members and for those who research organizations. Finally, I have provided a number of suggestions on how to build theory from empirical studies of work practices. As John Dewey (1934) suggested many years ago, work practices are an intriguing object of study because they form a grammar for understanding organizing as it happens:

It is no linguistic accident that “building,” “construction,” “work,” designate both a process and its finished product. Without the meaning of the verb that of the noun remains blank. (p. 51)

Let’s begin to fill in the blanks.

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