KNOWLEDGE MOVES: A COMMUNICATION PERSPECTIV[1]

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Session I-1

Abstract

This paper develops a vision of knowledge distinctively rooted in communication theory. We propose a conception of knowledge that, built on a view of communication as constitutive of organizational reality, transcends the opposition between cognitive and performative models of knowledge. We argue that meanings both emerge from interactions involving actors in context and shape those contexts in turn. The continual (re)formation of the mutual context introduces possibilities for ambiguity and instability into each communication episode. Knowledge is thus both a resource for, and a product of, situated interactions. The paper illustrates middle managers' efforts to negotiate and generate intersubjective knowledge in a large municipality undergoing restructuring. Our case clearly illustrates that knowledge construction is a goal-directed, pragmatic accomplishment. The creation of new knowledge is triggered by dilemmas and ambiguities, to which actors feel compelled to respond.

Keywords: communication, intersubjectivity, context, ambiguity, text, knowledge.

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Suggested track D Knowledge sharing

1   Introduction

We are interested in the collaborative construction of knowledge. In this paper we propose a conception of knowledge that, built on a view of communication as constitutive of organizational reality, transcends the opposition between cognitive (knowledge as something held by an individual or group of individuals) and performative (focused on the activity of knowing) models of knowledge. In the first part of the paper, we contrast these two dominant models of knowledge. We then propose a third approach based on asking not what knowledge *is*, but what it *does* and *what people do with it*. Like Zorn and May (2002), we suggest that the creation and management of knowledge is essentially an organizational communication process, and one to which communication scholarship can make a valuable contribution. Next, we illustrate our ideas in a case using 4 situations which involve varying degrees of uncertainty and ambiguity, but all of which involve interaction and communication. We conclude with a brief discussion of knowledge creation as a goal-directed, pragmatic activity, triggered by ambiguities and invariably accomplished intersubjectively, in and through communication.

2   Theory/Issues

Cognitive and Performative Models of Organizational Knowledge

Scholarly conceptions of organizational knowledge can be loosely grouped into two broad categories according to where they suggest that knowledge resides. In the first category, knowledge is located in the minds of individual knowers, whereas in the second, knowledge is generated primarily in the performance of joint activity. This section elaborates each of these models briefly.

The cognitive model portrays knowledge as a *stock of information*, a resource to be accumulated. Individuals who hold understandings of more concepts, or whose understandings are more elaborate and adapted to a particular environment, are more "knowledgeable" and therefore more likely to achieve goals. Knowledge, then, is something "possessed" (Cook & Brown, 1999) by the individual in either tacit (procedural) or explicit (declarative) form. A basic assumption of most knowledge management literature is that knowledge is essentially a symbolic transcription of individual understandings. Nonaka and Takeuchi (1995), for example, describe how the intuitive understandings of a skilled baker are captured in the technology of a mechanical breadmaker.

Knowledge is commonly treated in the KM literature as a homogeneous quantity. If tacit, it is unarticulated, and thus indescribable (although its latent existence may be inferred from observation of the intelligent responses of people engaged in an activity). Once articulated as explicit knowledge, however, its essential homogeneity is not seen as problematical. Terms such as "transferable" (McAdam & McCreedy, 1999; Narasimha, 2000), "convertible" (Zaug & McPhee, 2000), "manageable" (Davenport & Prusak, 1998), "codifiable" (Ahonen et al, 2000), "quantifiable" (Narasimha, 2000), and "transactable" (Snowden, 2000) are employed (although sometimes critically). Thus, once discovered ("created"), knowledge either exists, or does not exist (although it may be--is usually, even--unequally distributed). As Stacey (2001) notes, the implied theory of communication is information-based, and transferability is simply a form of diffusion: one-to-one transmission of practice.

An important concern in this model is the relationship among knowledge, data and information. For instance, Davenport and Prusak (1998) claim that data are objective facts about people, places, things, and events; information is a set of data that influences a receiver's meaning because it has been designed by the sender to do so. Knowledge is information that has been transformed by its passage through a person's interpretive frame of reference; it is contextualized as that person situates it by

comparing situations, evaluating potential consequences, making connections between pieces of information, and considers others' appraisal of the information.

A cognitive perspective typically distinguishes between types of knowledge (though making clear distinctions is rarely a simple feat; see McInerney, 2002) in an attempt to evaluate different degrees of knowledge. Nonaka and Takeuchi's (1995) widely cited model of knowledge creation and dissemination distinguishes between tacit and explicit knowledge. *Tacit* knowledge is "deeply rooted in an individual's action and experience" (p. 8). Polanyi's (1967) famous example of bicycle-riding is a case in point: Though stored in the body, the ability to ride is demonstrated not through explanation, but through presentation. Transferring tacit knowledge to others is accomplished through socialization and externalization. Only when it is externalized can this type of knowledge become useful to the group. *Explicit* knowledge, on the other hand, can be made evident linguistically (through writing, drawing, programming). In its explicit form, knowledge lends itself to recombination and becomes "transferable" (McAdam & McCreedy, 1999; Narasimha, 2000), "convertible" (McPhee & Zaug, 2000), "manageable" (Grover & Davenport, 2001), "codifiable" (Ahonen et al, 2000), "quantifiable" (Narasimha, 2000), and "transactable" (Snowden, 2000), and thus accessible to others. As Stacey (2001) notes, the implied theory of communication is information-based, and transferability is seen as nonproblematical, simply a form of diffusion.

Numerous knowledge management" initiatives illustrate the perceived value of this extraction of knowledge from individual owners (Alvesson & Kärreman, 2001; Flanagin, 2002). Knowledge is an asset, "intellectual capital" that can be exploited for organizational benefit (e.g., Bontis, 2002). The successful organization is one that best enables the knowledge creation spiral from socialization (tacit-to-tacit) to externalization (tacit-to-explicit) to combination (explicit-to-explicit) to internalization (explicit-to-tacit).

In terms of organizational knowledge, considerable research focuses on *collective* knowledge and its functions. Groups and organizations are said to possess tacit and explicit knowledge (though the grounds for making this claim are rarely interrogated; see Sandelands & Stablein, 1987). Explicit collective knowledge is stored in codified form in manuals, archives, databases, and role structures (Blackler, 1995; Walsh & Ungson, 1991). Tacit collective knowledge typically resides in activity routines (Cohen & Bacdayan, 1994; Nelson & Winter, 1982; Orr, 1996) and in groups' and organizations' beliefs and values (Heaton & Taylor, 2002; Sackmann, 1992). Although all collective knowledge is said to originate in individuals, organizations shape routines

and produce large quantities and types of texts; this makes them knowledge repositories, and a great deal of energy is devoted to organizational memory systems as part of knowledge management initiatives.

The second model of knowledge portrays knowledge as action, focusing on the process of knowing rather than on knowledge *per se.* Here, knowledge is not an identifiable thing, but an attribution made about social practices. The performative model resists traditional distinctions between types of knowledge. Similarly, all situations create an interplay between the individual and collective (Lave & Wenger, 1991; Reckwitz, 2002), thus invalidating the individual-collective distinction. Orlikowski (2002) explains that "knowing-in-practice "does not exist 'out there' (incorporated in external objects, routines, or systems) or 'in here' (inscribed in human brains, bodies, or communities). Rather, knowing is an ongoing social accomplishment, constituted and reconstituted in everyday practice" (p. 252). As systems of practices, organizations' skillful performances emerge through members' engagement with their contexts (Tsoukas, 1996).

The performative model explicitly recognizes the centrality of social interaction. Clearly, knowledge is no longer seen as a "stock of information." But what is in its place? The focus on process in this literature has tended to obscure the presumed need to define the concept. As Alvesson and Kärreman (2001) suggest: "A common take on knowledge seems to be to accept or side-step the problems of defining the concept, but go on and use it anyway" (p. 999). Orlikowski (2002) suggests that knowledge is essentially know-how, "a capacity to perform or act in particular circumstances" (p. 251), but this know-how ultimately resides in individuals. Others applying this perspective suggest that knowledge is produced collectively in processes of organizing. For example, Weick and Roberts (1993) describe the emergence of a "collective mind" as sailors recovered jet fighters on an aircraft carrier. Although no single person had a complete understanding of the entire process, and each individual's knowledge was limited, the close attention of each individual to task, structure, and events produced enabled them to accomplish challenging task. Similar themes are developed in the literature on coordination in computer-supported cooperative work (Heath & Luff, 1996) and in distributed cognition (Hutchins, 1995). Despite this attention to performance, it remains that successful systems depend on *individuals'* knowledgeable contributions and representations[2]. We are back where we began, with the position that knowledge—though it may be generated initially through

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[2] Although, in distributed cognition some knowledge, particularly structural knowledge, is captured in the shared artefact or representation.

action and may be about contextual rules—comes to reside within individuals, or in codifications.

A view of knowledge as a readily observable cognitive entity is challenged by the perspective which holds that knowledge exists only when it is enacted. A strictly performative perspective on knowing is unable to account for the persistence of knowledge, however. Although references to capacities and competencies imply characteristics that persist beyond their moment-to-moment enactment in practice, proponents of this perspective rarely indicate the nature of these capacities. A focus on knowing does not explain *how* capacities for action develop and persist.

In summary, to a large extent these two models reproduce contemporary debates in epistemology and the philosophy of knowledge (Anderson, 1996; Fuller & Nickles, 2002; Schatzki et al, 2001; Turner, 1994). Each offers a different view on three fundamental points: the nature of knowledge, the degree to which knowledge is separable from practice, and where knowledge resides (in the individual, the collective, or in interaction). In the cognitive view, knowledge is an individual (or sometimes collective) possession, an asset that can be used in a variety of contexts to create organizational advantage. The performative view, on the other hand, claims that the cognitive model improperly reifies a dynamic and indeterminate process, arguing that organizations generate knowledge through members' engagement with their contexts in systems of practices, (Brown & Duguid, 2001; Tsoukas, 1996). This perspective has yet to explain how knowledge can be an enduring characteristic of the individual or collective actor, however. Although some scholars suggest that the knowledge in action view is complementary to the knowledge-as-information model (e.g., Cook & Brown, 1999; Orlikowski, 2002), the two models are more commonly positioned in opposition to each other.

In the next section, we propose a third approach, grounded in communication. In this endeavor, we start from Cook & Brown's (1999) call to examine the relationship between knowledge and knowing as a generative dance. We draw on communication theory to shed light on *how* actors negotiate and generate intersubjective knowledge within a given activity system. We take a contextualist approach when we assume that knowledge is a social production. It is not located solely in the heads of individuals, but is situated in historical, social and cultural context and is given form in a variety of practices, media and artefacts. As such, it is continually re-produced and negotiated in interaction among members of a knowledge community. We highlight the mutually defining nature of system and interaction by focusing on (a) the ways activity is simultaneously mediated by, and produces subjective and intersubjective reifications

(we will call them *texts*), and (b) how systems present rules and resources that shape both identity and conceptions of appropriate action.

Toward a communicational theory of organizational knowledge

The Constitution of Organization

Over the past two decades, scholarship in the field of communication has theorized communication as much more than a conduit for transmitting information by already-formed subjects. Rather, it is conceptualized as an ongoing and historicized process that constructs identities, knowledge, artifacts, and social structures.

The issue of constitution has been central to contemporary theorizing in organizational communication. The basic argument is that communication constructs the organization and is central to the continual process of organizing. McPhee & Zaug (2000), for example, propose four interpenetrating "flows" of communication processes that bridge the micro and the macro in the continual (re)construction of the organization. These "flows" link the organization 1) to its members (membership negotiation), 2) to itself reflexively (self-structuring), 3) to the environment (institutional positioning), and 4) adapt interdependent activity to specific work situations and problems (activity coordination). Each kind of flow, McPhee and Zaug argue, is "actually a kind of interactive communication episode, usually amounting to multi-way conversation or text passage, typically involving reproduction of as well as resistance to rules and resources of the organization." While they acknowledge the centrality of communication in bringing about and maintaining organization, McPhee and Zaug assume that organizations possess a certain defining set of characteristics of organizations. Their primary interest is thus in a system-level analysis and in relations among episodes of communication.

Another approach, the Montreal school developed around Taylor and colleagues (Cooren & Taylor, 1997; Heaton & Taylor, 2002; Taylor & Van Every, 2000) focuses more on the individual, micro-level interactions that produce organization. They show how actors' coorientations produce *text-objects* that represent collective identity and intention. We have argued elsewhere (Taylor et al 2001) that communication is the modality of structuration (from Giddens' (1984)). In this perspective, meanings both emerge from interactions involving actors in context and shape those contexts in turn. The continual (re)formation of the mutual context introduces possibilities for ambiguity and instability into each communication episode. In other words, communication gives form to an organizational reality that is an ongoing accomplishment situated in a

continual stream of events. Seen in this light, knowledge is both a resource for, and a product of, situated interactions.

The Emergence of Knowledge in Practice - Knowledge as a Capacity

Rather than trying to define and identify characteristics on knowledge, we prefer to ask *what knowledge does*, and *what people do with knowledge*. To look at what people do with knowledge implies taking account of human motive and intention. It also means placing activity within the context of purposeful interaction in which people typically engage.

As Wittgenstein (1958[1953]) pointed out, language is a practical tool for accomplishing things. It is normally associated with an activity. Acting and speaking are part of a single activity complex. Knowledge, as both Giddens (1984) and Weick (1995) argue, emerges in a reflexive monitoring of the stream of experience. As such, it is an unfinished construction that must be continually sustained in the ongoing flow of human work and interaction. Knowledge creation is grounded in human agency.

Like Orlikowski (2002), we suggest that knowledge can be understood as *the capacity to act*, that is the ability to intervene in a situation or change the course of events. This capacity derives from both the agent and the system within which he or she is situated. According to Giddens (1984), in order to act, an agent must have a motivation or intention, which is found in discursive and practical consciousness. Giddens sees purpose as emerging out of action as a result of its reflexive monitoring, an agent's ability to reflect on past behavior, a kind of ongoing, in-the-moment rationalization of action that is already in progress or is even past (this idea is also present in Weick's (1979) notion of enactment). These rudiments of agency are constituted and reconstituted in interaction within a system, which is the location of intersubjective meanings shared, to a greater or lesser extent, by the individuals whose interactions (re)construct it.

Capacities for action—as manifestations of agency—are the residues of interactions, shaped by the principles of the system of articulation, which are medium and outcome of those very interactions. Consequently, one's capacity for often depends on the acceptance and validation by others, whose judgments are likewise shaped by the rules and resources defining the context. In knowledge-intensive work, for instance, others' perceptions of an actor's knowledgeability are fundamental to effectiveness, and are therefore the target of the actor's persuasive appeals (Alvesson, 1993). Actors and knowledge are thus always and already embedded in a set of

formative relationships. Agents' capacities for action are thus intimately tied to systems and their structural properties.

Agency, and the objects and subjects that it brings to life, emerges in two distinct, although inter-related, spheres: that of interaction with the material world, and that of interaction with the social world. Taylor refers to these as the respective dimensions of a co-orientation system in which all human agency is embedded (Taylor & Van Every, 2000). Sewell (1992) takes up a similar notion. He departs from Giddens is seeing structures as "composed simultaneously of schemas, which are virtual, and of resources, which are actual"(p. 13). A schema is what makes a resource meaningful as a resource. One is in the symbolic world and the other in the material, but both must reinforce and sustain each other. This is rather like Bourdieu's (1990) notion of *habitus*, although the focus is less on deeply-embedded, unconsciously enacted practices and more on the details of their enactment.

What is more, knowledge is often a collective achievement. Hutchins (1995), for example, has shown how cognition can be distributed, and knowledge developed in the discourse and practical activities of collaborating groups. Wenger (1998; see also Lave & Wenger, 1991) illustrates how communities of practice can generate bodies of knowledge which become resources that resides in both the individual and in the community. Knowledge—as a capacity to act—is thus thoroughly social and contextualized in its generation and deployment.

To summarize, meanings both emerge from interactions involving actors in context and shape those contexts in turn. In this view, communication processes are concerned with the accomplishment of social action. We engage in communication to achieve something impossible in isolation. These pragmatic interactions mediate and produce the context and its reifications, such as texts, tools, or concepts. In turn, the relationship between the actor and the (social and material) context in which action takes place furnishes the very possibility for social action by supplying identities, rules, and resources that can be appropriated in action. Because it is fundamental to activity, communication is constitutive of, and gives form to, organizational reality.

What is perceptible to people involved in language-supported communication is text: whether spoken or written. Text is where we discover, by inference and experimentation, the agency, or intentions, of others, their social as well as their material preoccupations: in the modal markers present in the text that serve to translate attitude (Taylor et al., 2001).

Our concept of text is inspired by sociosemiotic theory, which is characterized by its focus on the uses of language in context. Halliday and Hasan (1985), for

example, define text as "language that is doing some job in some context" (p. 10). They draw attention to the idea that text can be both product and process. As product, "it is an output, something that can be recorded" (p. 10) — taped or written down, for example. This perspective suggests that language is an object to be analyzed according to its inherent symbolic characteristics. Text-as-process, however, is the medium of an interactive event, a social exchange of meanings: "Text is a form of exchange; and the fundamental form of a text is that of dialogue, of interaction between speakers" (Halliday & Hasan, 1985, p. 11). Perfect correspondence of subjective meanings can never occur because of the diversity of actors' identities, experiences, and interpretive preferences. Examinations of intersubjectivity thus turn from meaning correspondence to the continual (re)formation of the mutual context that introduces possibilities for ambiguity and instability into each communication episode. If text is meaningful it is "because it can be related to interaction among speakers" (p. 11). Thus, we see text as a resource possessed by a community, and as an instrument for communication; it is the medium people use to sustain organization. When text is considered from the perspective of outcome, or product, it lends itself to multiple uses, a variety of environments, and incorporation into a number of processes. But it must be used within one of these contexts—incorporated into a process—for it to be a text in them. The issue thus becomes *how a text does some job in some context*.

Knowledge Moves

As agents reflexively monitor the conditions and consequences of actions, they will invariably encounter problems or obstacles. We suggest that these obstacles trigger activities aimed at improving capacities for action. We will refer to these goal-directed, pragmatic, problem-solving activities as *knowledge moves*.

In situations where actors must coordinate and control both their own and others' activity (i.e., in organizing), knowledge moves are always positioned in relation to the system in which they find themselves. Not only must agents understand important distinctions within a given domain to have their knowledge moves interpreted by others as such (Tsoukas & Vladimirou, 2001), but these activities also influence situations beyond the immediate interaction and thus contribute to structuring the system Knowledge moves can also frame actors' perception in ways that may either facilitate or diminish capacities for future action (Conrad, 1993). We suggest that taking knowledge moves as a unit for analysis enables us to look at the analytic distinction between knowledge as a possession and knowledge as knowing in a new light. Actors

have capabilities, but these are thoroughly contextualized, and they are made visible and validated through interaction.

We follow Knorr-Cetina (1981) in exploring *situations* as fundamental to understanding the interactional and contextual features of organizational life. Such a focus highlights actors' expectations, the rules and scripts guiding interpretation and interaction, and the resources at hand. Knowledge moves arising from sensed inabilities to act always occur within situations, and they may appear quite differently due to situational factors. This is not to say that people will necessarily increase their capacity to act if they increase their understanding of a situation, however. The case we present in the following section clearly illustrates this.

How, then, can we distinguish between various situations which call for knowledge moves? We suggest that one key factor affecting agents' capacities to act is their understanding of what they need to do in a situation. On one end of a continuum we might find situations in which knowledge moves appear to be the straightforward transfer of information from one agent to another, producing a capacity to act in the receiver. This is the knowledge transfer or knowledge sharing situation common to the cognitive model: Knowledge appears to be codified and can, therefore, move from place to place (or person to person). In our communicative conception, the appearance of knowledge transfer rests on a set of communicatively-formed conditions: agents share a sufficient amount of background or contextual knowledge; they agree about the meanings of activity, and they understand the requirements and resources available for a capacity to act. . If text, taken in the broad sense, is meaningful it is "because it can be related to interaction among speakers" (p. 11). All text (and language) is indexical: it depends on the existence of previous experience and at least partially shared understandings. Speech in effect "points" to something. Language, because it is intrinsically ambiguous, always requires a context of activity to be understood: shared background (or frame) knowledge and it can only take on its full meaning in context. If these conditions are present, then actors do not need to negotiate the preconditions for knowledge and, knowledge can be constructed as information and can be transferred unproblematically.

In a determinate situation, knowledge moves "look" like the simple transmission of information (Shannon & Weaver, 1949), as long as the system is structured to permit such ease of exchange. Shared expectations for roles, the meanings of activities, and the proper unfolding of events may be (and,we argue, generally are) generated outside the particular situation.

As intersubjective understanding erodes, situations become increasingly indeterminate. If actors do not share common background assumptions, if they do not agree about the meaning of their activity, and if they cannot identify relevant rules and resources afforded by the system, their capacities for action become unclear. Situations marked by ambiguity or equivocality, for instance, require sense-making and impression management (Eisenberg, 1984; Weick, 1979). Information transmission is insufficient for producing knowledge, because there is no agreement of what counts as relevant information. In such situations, knowledge moves look like the knowledge as action model, with improvisation, negotiation, and ongoing adaptation foregrounded.

Most organizational situations have some degree of ambiguity or equivocality. Indeed, in many organizational situations, factors creating indeterminacy seem to be the rule rather than the exception (Weick, 1995). This obliges to co-construct capacities for action, highlighting the formative qualities of communication. Therefore, we expect to see few instances in which information transmission is deemed adequate for competent action and multiple interactions in which actors negotiate meanings or implicaftions. In other words, we anticipate that in many organizational situations, agents will be unable to use simple information transmission to accomplish knowledge in ambiguous situations.

3 Results: The Case study

Situation

In this section we illustrate actors' efforts to negotiate and generate intersubjective knowledge in one specific organizational context. The case is that of a large municipal organization recently formed from the fusion of a a major city and a large number of smaller surrounding municipalities. The process was begun approximately two years before our interviews and became official a year into the process. At the formal level, then, administrative structures are new for both the districts of the former city, which generally gained autonomy, and for former municipalities, which are now a part a larger structure and have less self-determination. At the informal level, people who did not know each other and who do not share a common history[3] are now called upon to work together.

The fusion was to some extent imposed by a higher level of government in the name of efficiency and economies of scale. It was hotly contested by a number of smaller municipalities, however. This climate may partially explain the strategy for the

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[3] Or who, in some cases, had shared experiences but had been on opposite sides of the fence.

fusion, in which the overarching structures were defined but many of the operational details and linkages were left unspecified. Our case is thus an excellent example of an organization in the making (Weick 1998), where interactions between members at all levels of the organization act to negotiate, define and redefine the very mission and orientation of the new city.

In this context of great fluidity and indeterminate interactions, managers seek to find a new balance and adapt traditional approaches and tools to deal with the new situations in which they find themselves. Particularly affected are middle managers, who are confronted daily with uncertainty and ambiguous situations in which they need to judge not only, what is going on , but how to move forward in the absence of clear rules and procedures.

Their position between different levels in the organization makes middle managers particularly interesting as transmitters and generators of knowledge. Middle managers are both subordinates and superiors, thus in an intermediate position, and empirical studies have shown that their work involves a substantial degree of problem-solving (Pinsonneault et Kramer, 1993). They are often called upon to combine decontextualized strategic information with local, situated knowledge (Fenton-O'Creevy, 2000; Janczak, 1999) to ensure that decisions are translated into appropriate actions (Balogun, 2003; Farquhar, 1998; Ikävalko & Aaltonen, 2001). Despite this crucial interpretive and mediating role, middle managers have generally been understudied (Huy, 2002; Rouleau, 1999).

Method

In a series of interviews we asked middle managers to describe both typical and atypical examples of their use of information in their work using a critical incident technique (Flanagan, 1954). Our goal was to examine the role of middle managers in the transmission and interpretation of information and their use or formal and informal means for managing knowledge. After respondents had described their specific situations, we asked supplementary questions to further probe their perceptions of the importance of interactions and improvisation in their work and to detail their use of well-established information systems and procedures. Interviews were conducted by two researchers who alternated between asking questions and observing/note-taking. The interviews were taped, transcribed and their content analyzed using software for qualitative analysis.

Because our goal in this paper is to illustrate knowledge moves, we focus on locating instances of informative and typical practices. Assuming that knowledge—as

capacity to act—is a contributor to all types of problem-solving interaction in organizing, we give several examples of knowledge moves, first in relatively determinate situations, and then in situations characterized by more uncertainty and ambiguity. Finally, we analyze one instance where a capacity to act was generated in a situation with no apparent relation to the work context.

Types of Knowledge Moves

Information transfer

Despite the fluid nature of the organizational context in which our respondents found themselves, the majority of their work involved determinate situations and interactions. Most of the time, they knew the purpose of their activity, how to find the information they needed and what to do with it**.**

For example one of the managers we interviewed described his efforts around a survey to be administered in the city's public libraries. This dossier was on his desk when he took up his position. He immediately observed that the survey was not adapted to the local reality, having been designed in another context by a group of independent researchers. Thanks to his past experience and professional training, he quickly identified shortcomings in the survey questions and strategy and determined that it would not work in its present form. What is more, he drew on local, contextual (but highly codified) knowledge to determine that scarce human resources and problems in the chain of command would make it impossible for him to administer the survey through the library branches, as planned. In short, the original plan for administering the questionnaire was unworkable. Our manager went to his superiors, but they insisted the survey be administered. After two months of unsuccessful attempts and with a deadline looming, our manager decided to reorient the project and to proceed by other means for the data collection.

> I was up against a wall. There was no way it was going to work. And yet I was required to do it. We had to turn things around completely… So I called the researchers and I said, "Look, this is the situation and can we do it another way?" I suggested doing it in another way and they said, " You have a point, maybe we ought to have done it that way too." Because they had had problems themselves in other Canadian cities getting data from libraries.[4] (R5, p. 5).

In collaboration with the researchers, they revised the survey and decided to take another path for administering it - through the school system, since the target public was school children in grades 4 to 7.

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[4] All citations have been translated from the original.

Although this is clearly an example of a problem-solving situation and a knowledge move, our manager was never short of information. He was able to diagnose a problem at the outset and had clear ideas as to how to solve it. His knowledge of his working environment involved knowledge that you can't contact a librarian without first talking to his or her boss, and that, more generally, "if you don't control the means or the people who are supposed to do the work, the best you can hope for is good wishes but you have no means of ensuring that the work gets done."(R5, p. 5) The problem, for this manager, was in operationalizing his information and having it accepted as valid. His existing resources (cognitive, administrative, contextual knowledge, etc.) enabled him to call the independent survey team and seeking their approval to change the way the survey was administered. This activity contained little ambiguity (both parties shared knowledge about what a survey is, the available range of methodological choices), but the transfer of information between the survey team and the manager increased our manager's legitimacy, and thus generated a further capacity to act.

This is the knowledge transfer or knowledge sharing situation common to the cognitive model. From our perspective, in this situation the communication conditions are unproblematic: managers share necessary background knowledge; they agree on the meaning of the activity and understand the requirements or resources necessary to act. There is no need to negotiate the preconditions for knowledge and knowledge can be viewed as transferable information.

Interpretive work

The situation in our second example involved some ambiguity as to rationale and underlying philosophy but not in terms of goal, nor in terms of procedure. Another manager told us about his work in managing a dossier involving the organization of a major cultural event. The event was to take place in the summer and fall of 2003, several months after our interview. The previous edition had been two years earlier in 2001. Organized by a non-profit organization, the Festival received funding from three levels of government including the City. Our manager's objective was to ensure that the organization could take full advantage of over $1 million awarded by the City in goods and services. A secondary responsibility was to ensure that the budget be managed efficiently and in accordance with existing administrative rules and protocols.

Although our manager had learned in 2002 that he would "inherit" the Festival project, it was an interim year and things were quiet. In mid-November, the person previously responsible for the Festival retired, leaving him a slim file containing "a few

pieces of paper"(R6, p. 1) - copies of letters and correspondence concerning the 2001 edition of the event and the Executive Committee's document of authorization.

Our manager was thus faced with a situation of lack of information which motivated him to act in order to try to solve his problem. He knew what to do, how to tackle the problem, both in drawing on explicit information that was coded and stored and in calling on people to help him. What he did not know. However, was how to interpret what he was reading. This interpretive work took place at two levels. First, there was a need to reconstruct the process.

> Based on the elements I found, I went back to consult our data bases, Lotus Notes, the GDD (our decision management system). I looked up the dossier and I found the contract, so I took it out and read it to try and get all the elements, because in addition to financial support, the City agrees to a loan that is reimbursable. So, there again, you need to know how to manage that loan, what are the impacts and how can it be spent. So I had to go after my sources of information. (R6, p. 2)

When he received a call from the Director of the Festival in January asking if there were going to proceed as they had in 2001, our manager seized the opportunity to go beyond paper-based documentation.

> "That's great, I'm glad you asked me that." So that's when I sort of asked him – I was fishing too – how it had worked in 2001. Who did he deal with, how did that work, so as to know right away what problems they had encountered and try to align myself with their needs. To get a handle on how urgent are his requests, and also to get a list of the people he had dealt with. So, he gave me the names of the people he had talked to in Finance, in Purchasing, a little bit everywhere. And I revalidated that list… So I talked to these people to ensure their collaboration in making the mandate clearer. That's how I went back upstream. (R6, p. 3)

Our manager also had another interpretive task. He needed to understand the "texts" on which the process is based, as in the precise meaning of the loan in the contract between the City and the Festival.

> In the file you can read that the City will lend a certain amount of money to [the Festival] with conditions for repayment, etc. etc…In words, it's written that the City will lend on the condition that the other two levels [of government] are committed. It's written. But what kind of commitment does it really mean? So it's really the person [formerly responsible for the dossier] who explained to me, "Look, it has to be a formal commitment and not just an intention. So it has to be written down." I've had that experience, when they called me to say "We want to take out a part of the loan that the City is ready to consent and here's the letter." And when you read the letter, it was more a letter of good intentions, good intentions of the style we are good partners and we want to help you, rather than to say we are prepared to commit ourselves to lend to you up to a maximum amount. So, without

the help of the person who advised me, I would never have been able to see what it really was… (R6, p. 6)

In this and the following example, our manager needed to ensure that his interpretation of the texts in front of him was an accurate one. In order to do so, he had to make sure that he wasn't reading the indexicality of the text correctly, that his frame knowledge matched that of the text producers.

What's missing most of the time is the whole philosophy. You know, people don't take the time, even me, I'm no exception. We don't take the time to explain in writing what we do. Example: someone will pick up this same file and will see that I sent an email to Mr. [Smith] from purchasing saying "Can we agree.." or "As we discussed, we agree to function based on general principles" It's written, but what does it mean to the person who reads it? Was there a problem? Why did we ask that? That's not noted, it's not written down. At the base, what's missing is the rationale… I have notes, I have exchanges of correspondence following our conversation or such and such an affair. So we always have the result but we don't have the basis for the action. (R6, p. 5)

Our manager made another type of knowledge move in this same situation. It was aimed, not at interpreting and understanding existing frame knowledge, but at negotiating between different perspectives. For example, the City and the independent organization had different perceptions and needs in terms of delays and flexibility. In order to be able to work together, these perspectives had to be reconciled, at least partially.

You have to understand, like I said, that [the Festival] is a company outside the City, its autonomous, its independent, so they act like a private business. That means fast contracts, whereas at the City it's long, it's a little longer, and the process of formulation is a bit more strict. It's normal, it's public money, so we have more stringent processes that you have to follow step by step. So it's a matter of trying to see how we can try to introduce a little flexibility into the system to speed up the process, all the while respecting the rules as I said. So we had a meeting and we talked. They explained their needs, we made lists, we asked purchasing to respect the rules, but in the spirit of the law without adding the particularities that the City imposes in addition to the general framework. (R6 p. 3)

Once this interpretive, negotiating work had been accomplished and the rules of operation for the 2003 Festival had been established, the project passed into a more operational mode, focused on implementing decisions that had already been made. The rest of the Festival situation followed a fairly standard model, characterized by unproblematic knowledge transfer. Managing one project is much like managing another and our manager was well prepared for this phase. He drew on a number of guiding principles, such as always try to talk to the person highest up in the hierarchy if

you have a favour to ask, an exception to discuss or want to speed up the process. The knowledge moves in this phase are still pragmatic and contextually based, but there is common agreement on the rules of the game. Background assumptions were generally shared and if there was ever disagreement as to the meaning of the activity, they were quickly resolved. For example, in discussing trade-offs between swift treatment of the Festival's purchasing requests and strict application of the City's particular criteria for calls for tender, it was quickly agreed that, since there was no value-added for the City, who was simply an intermediary between the Festival administration and the suppliers for goods and services, they could relax their categories to lighten the decision process.(R6, p. 9)

Based on the 2001 experience, our manager was able to obtain additional information and improve some elements of the process. His knowledge moves resulted in a smoother, better-documented process. Although he made a conscious effort to document his interventions in the dossier, he expressed doubts that another person could gain a complete understanding from the record, however. This, again, points to the impossibility of consigning all knowledge and the importance of context in interpretation.

> I was able to validate [the previous experience] and thus obtain some new information to move the dossier along. I say move it along because we changed some things to lighten the process, accelerate the treatment of requisitions that they had to make to make it simpler, keep better records than the previous managers, date our actions in the file, keep records, emails, telephone notes, etc. (R6, p. 3)

The knowledge moves in this situation involve a good deal of knowledge transfer. In order for that knowledge to flow smoothly, however, there was a considerable amount of preliminary work to be done. Our manager had to understand the context of both the past process and the texts that would govern the 2003 experience before he could develop his capacity to act. What is more, he had to establish common ground, first with the Festival administration and later when he and the Purchasing Division engaged in collaborative interpretation of the rules for calls for tender.

Working through ambiguity
Perhaps the clearest example of knowledge moves in a situation with intractable or confusing challenges was described by a manager responsible for developing a network for the promotion and diffusion of cultural products, such as exhibitions and performances. Before the fusion, the main metropolitan area had a

network of culture houses that were linked together administratively with a common mission, a common organization, common standards and the same budget. Some of the cultural divisions of the other municipalities involved in the fusion were grouped together on a voluntary basis in another network, while a number of others did their own programming independently. Prior to the fusion there were thus two distinct networks operating from their own assumptions and with their own, very different, procedures and a number of unaligned actors. Our manager received the mandate to create, harmonize and find a certain coherence in the development of the new City's cultural diffusion network that should include everyone. At the time of our interview, a year into the process, our manager and his colleagues were in the process of defining the mission and utility of the network as well as the services it should offer.

The problem, as our manager saw it, was a lack of clarity in "the rules of the game," and consequently an absence of legitimacy to accompany his mandate.

> They created a new structure but at arms' length, so as not to offend anybody, in order to, how to put it, consider everyone's sensitive spots. And what that produces is that we don't really have any power to incite these people to collaborate. What I mean is, it's fine to say "we'll have a meeting of all the diffusers," but we can't say, like we might have in the former City, "here's a round table, a committee, and everyone is going to participate." Now, people only participate if they feel like it. (R4, p. 2)

The challenge as he saw it, however, was not so much to increase his authority as to get people interested in how a common network could be useful to them. Our manager felt that, without a vehicle such as a round table where everyone participates, he would not be able to stimulate interest, nor to evaluate the needs of the various actors. "How can you hope to create a synergy with everyone if no one is talking to each other."(R4, p. 4) This manager believed strongly in the value of exchange, both as a way of reconciling conflicting interests and of generating a better solution to fulfilling the mission they all share of providing better and larger outreach and better service to the public. For him, the emergent relationship between the actors was pivotal in defining the value of knowledge that would be generated there.

> To me, still in my optic of working from the ground up, if people see each other, talk to each other, orient discussions, orient subjects of interest, something will come out of that. … The plan of attack, the action plan is to keep working on the exchange, to continue dialogue with everyone, and also to go see what's going on elsewhere. I mean look elsewhere in the sense that there are other associations, other groups of promoters and [the City] has always been a part of that, but maybe now we have a new way to position ourselves with relation to the external environment in terms of

diffusion. And that, maybe that can help us to position ourselves, to set us apart and in that way make us meaningful. (R4, p. 7)

Our manager was clearly struggling with how to accomplish the impossible. He insisted that the existence of a cultural policy to orient everyone to a common framework is essential. "I think it's vital that the General Direction say, "Look, we want this to happen". Just that, for the rest let us do it, but some direction to say "You have to talk to each other". (R4, p. 6) He hoped that this added legitimacy would give him the capacity to act, but were he to have it, he still did not have much of a plan other than continuing to do what he had been doing and to hope that things evolve. His knowledge moves to date had not been very successful. He was coming the conclusion that "with (so many) districts, we can't say "It will happen gradually, and we had better not disturb things." I'm more that kind of a manager, but I realize that, if we do that, in five years we'll still be in the same place." (R4, p. 5)

Our manager envisioned (without much enthusiasm) changing his approach to be more proactive and more directive (p. 6) to deal with the fact that those involved weren't ready to cooperate. On the one hand the former municipalities were afraid of losing their independent network, which was more flexible than even a small municipality, and a valuable asset. (p.2) On the other, the promoters in the districts of the former city saw no need to consider doing things any differently. (p. 8) But the differences ran deeper than that and affected not only attitudes, but also operations. For instance, one group typically charged for its activities while the other offered its shows free of charge. This in turn had an impact on the way shows were chosen, the type of programming available, the quality of shows, on relationships with arts organizations and artists, as well as on everyday management. (p. 9) "The more I dig, the more I see that there's a great gulf and it's because, it's fundamentally a difference in philosophy of ways of doing things, of the way of doing things more than of orientation. And that, that's very hard to reconcile." (R4, p. 3)

This situation illustrates knowledge moves in an indeterminate, intractable situation. Not only was interpretive work required to accomplish work, it was required to negotiate a definition of the nature of that work. Information transfer did not and would not enter into the picture, except perhaps had they been able to organize a round table. Similarly, interpretive work was at a standstill. Our manager had tried, unsuccessfully, to generate intersubjective knowledge and was basically at wits end to know what to do next. Still, he kept on trying. His efforts enabled continuing engagement (an alternative conception of action). Our last example, with this same manager, shows an unexpected and apparently spontaneous knowledge move.

A knowledge move as it unfolds

We experienced a surprising knowledge move which generated a capacity to act *during our interview*. In reflecting on his problems in getting people to sit down at the same table, our manager suddenly realized that his strategy was all wrong. He has been acting from a model based on his experience with the former City in which cultural promoters got together. He realized that if heads of division met, it might speed along the process.

> R- And, in talking to you (laugh) in talking to you…
> D- Yes, yes
> R- I realize that maybe my mistake is to go through the promoters who – that was the model of the culture houses (pause) … But, now we sort of reproduced that round table of promoters… But, at the outset I said to myself what I would like is to meet the division chiefs, so that they, if they. We have - You know when I said that the general direction of the City had to at least provide a direction, that need to say "Look, talk to each other". If I meet the division chiefs and we can agree and develop a common philosophy, they will spread it among their people and say that we have to work together here. As much to the culture houses to stop thinking just of themselves, solve your little technical problems in your districts, but after that we open up. …
> D- It's that they have more power, more impact when you have to get things done or to intervene or to lead, you're in the process of…
> R- There, when you say that, maybe I haven't been working with the right gang. I'm not working with the right gang. Anyway… (R4, p. 14)

Having seized on this idea, our manager immediately developed a strategy to anchor his newfound capacity. If they could not agree on a common vision, perhaps they could agree on the usefulness of common tools or standard procedures that would work to everyone's advantage. Not only had our manager decided to create a table for division chiefs, he had also, he believed, found a way to bring them to the table. It was obvious towards the end of our interview that he could hardly wait to start enacting it.

> If we can't share a common vision, we still have common problems and if I use them I can say "Look, on that matter, on that question, I can give you this kind of support, and we can gather the information.. " You know. I'll take an example that's in our mandate: statistical information, information on activities. And how to structure that information. We're going to need to be able to produce consolidated reports where everyone.. and they also need to produce reports for their district, but so that we can coordinate, we don't have any choice it has to be standardized. We have to know that everyone, when we say it's an exhibition, that we count, that we all count in the same way, etc. And that's a dossier that we have to lead with the, and it is important. (R4, p. 15)

During the interview, then, our manager generated a new capacity to act, but it was unplanned and unexpected. The interview was not engineered to enhance understanding. The collaborative exchange of the interview, while not a part of the situation, acted as a trigger and provided an impetus for the knowledge move. This move was achieved as our manager reflexively monitored his discourse, in communication.

4 Conclusions

The perspective on organizational knowledge outlined in this paper frames knowledge as a capacity for action that is constituted and reconstituted by actors in specific contexts. We analyze work in terms of knowledge moves that are triggered by perceived or anticipated obstacles to achieving a goal. These activities are carried out in a context that is undergoing continual communicative (re)formation, but which also supplies the identities, rules, and resources that frame interaction.

We have tried to reconcile the cognitive view of knowledge as something *out there* extracted from its source and deprived of its contextual features with a performative view in which knowledge is continually recreated and instantiated in practice. In focusing on what people do with knowledge and on the contextual grounding of all action, our approach enables us to account for both the persistence of knowledge which, when it is fixed in *texts*, can exist across time and space. It also foregrounds the communicative and interactional tactics (knowledge moves) that resituate knowledge that has been codified and decontextualized.

Our cases illustrate a number of knowledge moves, ranging from unproblematic information sharing (common in situations in which the social character of knowledge can be taken for granted), to sensemaking requiring the interpretation of existing frame knowledge and the collective construction of new knowledge (based on negotiating joint understandings in ambiguous situations). In all cases, we argue, the generation of knowledge is a goal-directed, pragmatic activity. In all cases, it is accomplished in and through communication. We suggest that the knowledge which results resides neither in texts (the cognitive view) nor in relationships (Bradbury & Lichtenstein, 2000), but in *texts* seen as the medium of a social exchange of meanings.

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