

Collective Meaning in E-Collaborating Groups

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INTRODUCTION

Organizations and groups have been typified as networks of shared meanings and systems of distributed knowledge (Tsoukas, 1996; Walsh & Ungson, 1991). The development of collective meaning is central to e-collaborating groups as well (Henderson, 1998). In this novel organizational form, professionals interact mostly through mediating technologies, and they may work from different sites and at different times (Kumar, van Fenema, & Von Glinow, 2005). Research has found that e-collaborating groups experience a wide variety of problems constructing and maintaining collective meaning (Cramton, 2001). Many aviation and ship navigation accidents are caused by collective meaning issues: misunderstandings, interpersonal collaboration problems, and technology-related failures (BFU, 2004; Hutchins, 1991a; NASA, 1999; Vaughan, 1996; Weick, 1993a). Current research commonly focuses on the complexity of specific cases for good reasons: large scale e-collaboration disasters take years of debate about causes of misunderstanding which have amongst others legal consequences. What is missing, however, is an inductive theory development process that sources from multiple cases and is aimed at explaining why e-collaborating groups failed to develop collective meaning.

The objective of this article is to categorize problems of developing collective meaning in e-collaborating groups, and to develop a theoretical analysis of these cases. We draw on a variety of qualitative studies from the areas of human factors, information systems, and organization studies that all focus on e-collaborating groups having difficulty to develop collective meaning. The article distinguishes problems of collective meaning in terms of expression and reflexivity. Next, an evolutionary perspective is developed that is used for analyzing these two categories. The article concludes with future trends relevant for academics and practitioners working in this area.

BACKGROUND: COLLECTIVE MEANING AS A PROBLEM OF EXPRESSION AND REFLEXIVITY

Collective meaning is defined as the socially constructed and meaningfully interrelated understandings of professionals working on the same group practice (Berger & Luckman, 1991; Schutz, 1967). When individuals develop collective meaning, they achieve a situated temporary state of mutual understanding. Collective meaning represents how group members' thinking interrelates (Weick & Roberts, 1993), usually without someone overseeing and controlling these processes (Hutchins, 1990; Van Baalen, Bloemhof-Ruwaard, & Heck, 2005). Collective meaning is situated because meaning construction is tied to particular roles, relationships, artifacts, times, and physical or information spaces (Kirsh, 1999). It is a temporary state in the sense that it can be disrupted by new experiences (Jones & Hinds, 2002; Weick, 1993a), new knowledge or by implementing new technologies (Edmondson, Bohmer, & Pisano, 2001). Collective meaning must be maintained to remain intact.

Our focus is on collective meaning in e-collaborating groups, defined as teams of professionals relying for their work communications mostly on information and communication technologies (ICT), and working usually from different locations and at different times. Examples include global teams of knowledge professionals working on products or services, emergency rescue workers, teams in the military, or aeronautics and space operations teams. These groups often struggle with the creation and maintenance of collective meaning, leading to inefficient processes, problematic outcomes, and sometimes dangerous consequences. Researchers have identified several instances of this phenomenon, relying on a case-based approach and focusing on topics such as communications, trust, and identity. Yet they have not categorized and explained

these problems across multiple cases from a collective meaning point of view. We inductively identified two categories of situations where e-collaborating groups have difficulty developing collective meaning. These are characterized as problems of expression and reflexivity.

Expression. Members of e-collaborating groups openly struggle with collective meaning and they are aware of that struggle. This category concerns a lack of ability. First, examples of this category include cases where professionals involved in complex knowledge work cannot express and exchange thoughts easily using e-mail or groupware applications (Cramton, 1997; Kraut & Galegher, 1990; Malhotra et al., 2001). Professionals may lack skills and patience for crafting e-mail messages or expressing themselves effectively through videoconferencing (Egido, 1990; Nemiro, 2000). Their perspectives on tasks and resources differ, and understanding someone else's point of view is difficult (Jones & Hinds, 2002). Conflicts may arise due to incomplete understandings of a counterpart's situation, and frustration over technologies and e-collaboration processes (Armstrong & Cole, 1995; Hinds & Bailey, 2000). Second, in terms of opportunity, technologies may be unavailable, malfunctioning, or ill-suited for (multimodal) communications across distances (Weick, 1993a, 1993b). In short, professionals cannot express their thoughts well due to ability and/or opportunity constraints. This constrains the back and forth moving of ideas, the evolution of group thinking, and the creation and maintenance of joint situation awareness.

Reflexivity. In some groups, members make assumptions and interpretations that, unknown to them and others at the time, appear with hindsight to be incorrect. This gap is not resolved due to a lack of reflexivity. Compared to the first category, there is an additional layer of complexity, namely people assuming there is not a problematic dimension to their situation. We call this a problem of reflexivity, the human capability to reconsider their own and others' agency (Giddens, 1986). Individuals assume that their interpretation of a situation, of their own agency, and of their agency's relationship to others' agency is meaningful. For instance, professionals sometimes interpret rules applying to their role incorrectly or too rigidly, thereby failing to consider others (Chute, Wiener, Dunbar, & Hoang, 1995). Sometimes, professionals are sticking rigidly to their understanding of a task situation, even though they are presented with alternative perspectives

(Weick, 1993b). They may misunderstand communications but assume their interpretation is correct and that therefore further checking is considered unnecessary (Weick, 1993b). In other cases, someone makes a mistake (executing a task incorrectly, deviating from procedures, or not informing someone) but that person and the team members fail to notice (Bennett, 2000; Chute et al., 1995; Hutchins, 1991a; Jones & Hinds, 2002; Perrow, 1984). When professionals come from different units, sites, organizations, cultures, countries, and/or professional communities, they may interpret and remember the same words and symbols differently—without realizing their counterparts' point of view (Cramton, 1997; Dougherty, 1992; Meadows, 1996; Sole & Edmondson, 2002). Sometimes they use different standards for the same task (BFU, 2004; NASA, 1999; van Fenema & Simon, 2003). Under such conditions, professionals may incorrectly assume that their counterparts will understand and correct them if necessary (Snook, 2000; Weick, 2001). In many distributed groups, a coordinator liaises between subteams; for instance, air traffic controllers (Weick & Roberts, 1993), SWAT teams (Jones & Hinds, 2002), or a liaison between users in the United States and a vendor team in India (Meadows, 1996). That person may fail to receive and relay information, and bridge perspectives of each subteam (Meadows, 1996). Sometimes, the coordinator's initial understandings and plans may prove outdated, without people at a group level realizing this. Collective meaning is thus not updated (Jones & Hinds, 2002). A lack of reflexivity implies a gap between individuals' assumptions about collective meaning and the quality of collective meaning as it appears with hindsight. This wobbly basis of collective meaning may permeate a group (Bennett, 2000), remain uncorrected, and disrupts group processes. Sometimes they never get resolved, or too late for group survival. Few researchers have distinguished or offered conceptual explanations of the two categories. This has resulted in imprecise theorizing and recommendations. We address this issue after introducing an evolutionary perspective on the development of collective meaning.

COLLECTIVE MEANING: AN EVOLUTIONARY PERSPECTIVE

Collective meaning results from communication and negotiation processes (Donnellon, Gray, & Bougon,

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