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Kiosks, Clubs and Neighborhoods: The Language Games of Online Forums*

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Abstract

Using Wittgenstein's language-game paradigm, we analyze the discursive practices of three online discussion forums devoted to topics of professional management interest, and present the different language games enacted by their participants. We characterize the differences among the three forums as kiosk, club, and neighborhood: distinctive games that vary in their complexity in terms of linguistic style, roles, and interaction patterns. We also find family resemblances across the three language games, suggesting what the language game of online forums could be. Our exploratory study shows how organizing occurs through the enactment of a language game. It suggests how similarities and differences in discourse development can explain commonalities and variants in the structure and functioning of online forums. We suggest that they might imply different types of environments for knowledge-sharing.

Keywords: *language game; discourse analysis; discursive practices; online forums; electronic communities; virtual organizations*

* Marshall Scott Poole and Jonathon Cummings were the accepting guest editors.

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1. Introduction

Advances in communication and information technology have dramatically reduced the geographic and temporal constraints organizations have traditionally faced, and have led to the emergence of new forms of organizing, often referred to as “virtual forms of organizing” (Fulk and DeSanctis, 1995; DeSanctis et al., 1999). While few pure forms of virtual organizations exist today (Dutton, 1999), most organizations present some degree of virtuality (DeSanctis et al., 1999; Kraut et al., 1999). Online discussion forums — sometimes referred to as virtual communities or electronic discussion groups — constitute one extreme form of virtual organizing. They are characterized by a discussion structure in which individuals post and respond to questions or commentaries that are organized by subject or thread. In-depth conversation and a high diversity of participation are possible since contributors can be located anywhere in the world, pursue discussions for months, or even years, and need only to share an interest in a topical area and have access to the Internet (Sproull and Faraj, 1995; Blanchard and Horan, 1998; Butler, 2001).

Online forums vary considerably in purpose (e.g., leisure, medical support, education), target audience (e.g., professionals, customers, patients), and degree of openness (e.g., public or proprietary access), and are increasingly regarded as important venues for promoting learning across the boundaries of time, space, and formal organization (Ahuja and Carley, 1999; Butler, 2001; Gray and Tatar, 2004; Herring, 2004; Sproull and Faraj, 1995). They provide a relatively new social setting in which professionals from varied organizations can come together to share information. Yet, meaningful knowledge-sharing among professionals requires situated understanding (Bechky, 2003) — which can be difficult to achieve in the context of online forums (Smith, 1999). The objective of our study is to show how online forums organize in different forms, develop specific language games, and, thus, create varied opportunities for information sharing.

Our focus is exclusively on the discourse developed by participants. Indeed, research has shown that people can create sustainable, shared language communities online (Wilkins, 1991), and that through the process of reading and writing, members of online forums participate in sense-making activities (Duin, 1991; Harasim, 1993). Moreover, language is the main locus of online forums (Herring, 2004), so it follows that an organizational understanding of these venues lies within their discourse (see Pennebaker et al., 2003; Robichaud et al., 2004). Yet, relatively little is known about the emergent rules of engagement within these collectives, or about the different forms online groups take over long time periods. By identifying similarities and differences in the discourse of online forums, we may uncover commonalities and variations in their organizational form.

In this paper we explore the discourse of online forums using Wittgenstein’s language-game paradigm (1953, 1969). Wittgenstein argues that participants in a community develop language games, i.e., systems including words, actors, and actions. These language games are important for researchers to understand, because patterned interactions are indicative of organizational structure (Feldman, 2000; Feldman and Pentland, 2003) and form the basis for how information is shared and interpreted within a group (cf. Argote, 1999). Wittgenstein stresses the multiplicity of language games, arguing that one cannot provide definitions of words or concepts, but only rich descriptions of language games — including language use and activities.

Because of its focus on the multiplicity of uses, the concept of language game seems relevant to the study of online forums, which vary in topics and forms. As noted above, participants in online forums discuss various topics. Moreover, there is a huge range of online forums — from rich communities to very sparse forums with only a few participants and posts. Collectively, the research to date shows that intimate relationships and development of community are possible online, and that online forums can be productive and sustainable. Case studies of online groups are available, such as Rheingold’s (1993) study of Adventure MUDs and Moon and Sproull’s (2002) account of the development of the Linux kernel. But the research also reveals that online forums confront developmental obstacles that can hamper information-sharing and lead to quick demise. Indeed, most online forums fail to attract participants and die quickly (Smith, 1999). Our study contributes to our understanding of online

forums and their complex reality by describing the language games enacted by participants in three online forums on one specific topic: Knowledge Management. Our paper provides a rich description of the language games embedded in the forums and sketches the family resemblances among all of them.

We direct our analysis to online forums with high potential for cross-organizational information-sharing among managers or other professionals. These forums are not established to produce a product or service, but merely to share information. We undertake an intense, qualitative examination of three online forums devoted to the same theme: Knowledge Management (KM). As a relatively new area of practice on the management scene, KM seems a ripe topic for information sharing. We select forums with the same topical theme in order to hold constant basic variations in subject matter, as well as the kinds of participants joining the forums. At the same time, because we are interested in documenting variations in structure and functioning, we select a varied set of forums among the large set devoted to KM found on the Internet. Our analysis reveals three distinct language games: *kiosk*, *club*, and *neighborhood*. These differ in their number of players, the multiplicity of roles players can take on, their discourse and interaction patterns, and the number and complexity of their (often implicit) rules. They imply different types of environments for information sharing. Although the premise of our analysis is not new — that discursive practices are indicative of organizational structure (Feldman, 2000; Feldman and Pentland, 2003) — our empirical goal is to show exactly how such different organizational structures are enacted through language in these online forums.

Our paper proceeds as follows. First, we provide an overview of linguistic perspectives and of the language-game paradigm, and we present the major dimensions framing our analysis. Second, we describe the research setting and how we collected and analyzed the data, including brief descriptive profiles of each online forum. Third, we describe the language game enacted by each forum. Fourth, we integrate these results to yield insight into the organizational similarities and differences among the three online forums. We conclude with implications of our findings for developing online forums as organizational venues for information sharing. We note our study's limitations and possible directions for further research.

2. Language Games and Dimensions of Analysis

2.1. Linguistic and discourse approaches to online forums

Language is often considered to be a tool to describe and report on reality; but it is actually much more than just a descriptive tool, as organizations are phenomena in and of language (Orlikowski and Yates, 1994; Boje et al., 2004). Organizational researchers have long studied specific aspects of communication, such as the impact of technology on it (e.g., Sproull and Kiesler, 1991), or the relationship between communication and organizations' characteristics (e.g., Rice et al., 1984). But more recently, there has been a growing interest in discourse and its consequence for organizational life (Grant et al., 1998; Keenoy et al., 1997; Boje et al., 2004). In this perspective, language is viewed as central to the organizing process; we adopt such a view here. Discourse analysis provides a useful lens for studying the process of organizing, and even more so in online forums, where language is the main locus and communication the main activity (Rheingold, 1993; Herring, 2004).

A stream of research has focused on the communicative practices in an electronic mediated environment. Some studies explore how technology has an impact on the organizational structure (Orlikowski, 1996; Wiesenfeld et al., 1999), while others focus more on the communication practices (Sproull and Kiesler, 1991; Straub and Karahanna, 1998; Orlikowski and Yates, 1994). While these studies provide a rich description of communicative practices, they often concern only small groups or discussion lists within the same organization or research community (Hesse et al., 1993; Star and Ruhleder, 2001). They focus on the changes to pre-established communicative practices induced by technology, or their potential impact on existing structures, rather than examining the emergence of forms of organizing. This paper describes the organizing processes in the beginning stages of online forums that emerge in the topical interest area of KM, and highlights the similarities and differences among various forums, with the aim to propose an explanation for these variations.

Another stream of research emphasizing the textual dimensions of online forums has focused on computer-mediated discourse (See Herring 2004 for a review of the computer-mediated discourse literature) and its linguistic characteristics (e.g., Ferrara et al., 1990; Crystal, 2001; Baym, 2000; Herring, 2002). While these studies provide rich in-depth analyses, showing how people have developed a distinctive set of linguistic practices and created new conventions unique to the electronic context — such as common abbreviations and emoticons (e.g., the smiley), contractions and informal spellings, and substitutions of symbols for letters — they do not provide insights into the organizing process.

Following Kolko (1995) and Herring (2004), we believe that in an online context, language is “doing,” in the truest performative sense (Austin, 1962). This is why we chose a language-game approach to analyze the discourse of the three forums: It provides a truly performative perspective on language, allowing a comprehensive approach to discourse that includes not only linguistic practices, but also social interactions and activities. Such an approach, therefore, offers interesting insights on the emergence of organizing through discourse. Wittgenstein (1953, sec. 231) defines words in “language games” as tools, or “instruments for particular uses” (Wittgenstein, 1953, sec. 231). In a language game, words and actions are closely related, since the meaning of words is defined through their use in social interactions.

2.2. The language game framework

Wittgenstein developed the construct of language games to describe the complexity and the situated nature of language. In the first part of his work, he aimed to define language as a calculus, a system of a combination of propositions, where meaning would be assigned to words by the existence of unique referents (Wittgenstein, 1921). This attempt failed, and Wittgenstein realized that words do not have the uniformity he had originally thought, and are, in fact, very diverse. Failure to appreciate this inherent complexity and non-uniformity of words led to philosophical confusion (Wittgenstein, 1953, sec. 122). Wittgenstein proposed the concept of a language game to describe the variety and complexity of language. This corresponds to a different perspective on definition: while one cannot define the universal and logical form he was originally aiming to grasp, one can describe the richness and diversity of language uses (Wittgenstein, 1953, secs. 1 & 122). We believe that such a descriptive approach is relevant to the study of online forums because of their diversity. It allows us to grasp the *family resemblance* (Wittgenstein, 1953) — or structure — between different language games.

The notion of game suggests the inherent flexibility of language: communication is fraught with noise and ambiguity; meaning, therefore, emerges from a constant realignment of different participants in a community. Consequently, this notion also highlights the possibility of multiple games across settings. Games evolve along with the social life of which they are a part; there are language games of colors, emotions, law, professions, work groups, countries, and business organizations (Aldridge, 1992; Astley and Zammuto, 1992; Barge, 1994; Smith, 1997; Myrsiades, 1998). However, beyond the differences, there are some commonalities defining a *family resemblance*. For example, the concept of a proposition is a family resemblance concept: it is linked together by intermediate cases and overlapping similarities, which do not run through the totality (Hacker, 1972). Similarly, we propose that there might be a family resemblance definition for online forums, which corresponds to the global structure of a game, as shared in multiple forums, and contrasts with the local structure that is unique to one, or a subset, of forums. Our aim in this paper is, following Wittgenstein, to try to unveil the family resemblances in online forums by describing their language games.

This definition of language as a motley combination of language games highlights the place of language in human life, its use in human behavior and discourse. Hence, Wittgenstein notes: “I shall call the whole, consisting of language and the actions with which it is interwoven, the ‘language-game’” (1953, I, sec. 7). Thus a language game consists not just of a language or language use, but also of certain actions. Moreover, it takes place in human activities and has a meaning only against the complex forms of human activities. Language games emphasize “forms of life” (Wittgenstein, 1969, I, sec. 23) that regulate thought and action. They are “spheres of activity... specialized forms of discourse” engaged in by a community (Astley and Zammuto, 1992: 444). As a simple example, Wittgenstein (1963) describes someone who is sent shopping and given a slip marked “five red apples.” The person gives the slip to the

shopkeeper, who opens the drawer marked “apples,” and looks up the word “red” in a table to find a color sample. Then he counts up to five, and for each number he takes an apple the same color as the sample out of the drawer. This shows how interacting and knowing a language implies much more than just knowing the meaning of words; the shopkeeper also has to be able to find the apples, know to put them in a sack, and to accept money in exchange. We are not using the words “apple” or “five” just to name, but as part of a practice that has its place in the grocery store. Each language game is a complete “system” of human communication (Wittgenstein, 1969, *BrB*, p.81), i.e., the language game is composed of words and actions. Hence, Wittgenstein’s language games involve much more than speech acts (Austin, 1962) or other language-related activities. Language games must be understood as discursive practices that are socially enacted and intrinsically linked to actions. Similarly, the language game of an online forum involves more than its linguistic style: it also involves activities and ways of interacting (e.g., presenting oneself, giving feedback, exchanging certain types of information), and different roles that people have or take on.

Yet, the language games of online forums differ from Wittgenstein’s language games in an important aspect. For Wittgenstein, language games as “forms of life” are situated and, thus, include the material environment (artifacts, spaces, etc.) in which interactions take place. For example, in the shopping language game, the slip, the drawer, and the apples are essential elements in the game, since it consists of the interactions of the two players with physical objects, which are located in different locations in space. We don’t have access to that material world in the context of the forums. This is due to the fact that material context (apart from some technology features) is extremely limited in online forums. Moreover, online forums involve a different type of activity, primarily knowledge-based, from the activities considered by Wittgenstein. In that sense, the language games of online forums are an extreme example of language games, where language plays a more important role than in other language games.

The notion of language game developed by Wittgenstein (1953, 1969) offers an approach to study the emergence of these organizations through the linguistic and social interactions of their members. In that sense, it is quite close to the notion of genre (Yates and Orlikowski, 1992; Orlikowski and Yates, 1994), which offers an analytical lens to study the structuring of communicative practices in organizations. A genre is defined as a socially recognized purpose or form, such as the memo or business letter. Although the concept of genre also takes into account the social interactions through which the form and purpose of a genre are agreed upon, its focus is the different types of discourse. Therefore, the genre perspective focuses on the text as an object produced and shaped by individual communicative practices and social and organizational forces. It does not, however, provide insights on the conversations through which a community organizes and structures itself. One could argue that the language-game perspective is complementary to the genre approach, since participating in the language game of a community involves the enactment of different genres.

We can expect new venues, like online forums, to give rise to new and varied language games. Indeed, as Wittgenstein notes: “This multiplicity is not something fixed, given once for all; but new types of language, new language-games, as we may say, come into existence, and others become obsolete and get forgotten.” (Wittgenstein, 1953, I, sec. 23). Contributors may import practices from existing games to the new venue, but new games are bound to emerge in the course of dialogue. Depending on the context and the rules, games are more or less complex. Some are very simple, like the builder game described below; some are more complex, such as the language games of mathematics or emotions. The complexity varies with the number of “words,” (potential) actions, (implicit) rules, and players (taking one or more roles). Wittgenstein describes a primitive language game: the builder A shouts the words, and his helper B gives him a slab, his action being a “reaction” to the shout (Wittgenstein, 1953, sec.2). The language game of the builder includes only four words (“cube,” “column,” “slab,” “beam”), two actors (and two roles, the builder and the helper), and two possible actions (give or not give a slab), but despite its simplicity, it is a complete game.

It is important to note that rules are not typically explicit. In certain cases, they may be defined or discussed, but most of the time they are implicit. We rarely use rules as we might in doing calculus, and if we were asked what kind of rules we are using, we wouldn’t be able to reply – just as children playing ball would not be able to articulate all the rules of the game (Wittgenstein, 1969, *BB*, p. 25).

The actual language game is the enacted process of dialogue, and newcomers are taught the rules by means of example and practice. Rules are implicit and they are not fixed. They evolve and change, and there is a constant enactment of the rules and meaning through the players' interactions. Rules in a game do not only define right or wrong use and behaviors, but also roles, and the interactions implied by these roles. Newcomers joining an online forum learn how to "play the game" — how to behave and interact — by observing what others do (e.g., Does one perform greetings and closings? Does one introduce oneself? Refer to past experience? Give feedback?), and sometimes by making mistakes and being told.

We expect to find some resemblance among the language games of online forums that discuss Knowledge Management. At the same time, we expect differences to emerge across online forums, since each is an independent system of actors and actions with its own dynamics. The logic is akin to Wittgenstein's (1953) observation of both family resemblance and differences among the language games of color (black, white, red, yellow, and so on). Understanding such differences across online forums can help us distinguish various types of forums that emerge on the Internet. When we can understand the language games of online forums, their diverse possibilities for information-sharing will become evident.

2.3. Dimensions of analysis

In order to document the structure of language games, the researcher needs a conceptual model and methodology. Deconstruction of text, case analysis, ethnography, and systems analysis have all been used to document language games (e.g., Aldridge, 1992; Grover, 1993; Barge, 1994; Myrsiades, 1998; Van Every & Taylor, 1998; Topp, 2000). Here we take a case-study approach, examining the discourse of three online forums. Our focus is the language game of the forums as organizing entities; that is, how members interact in the online forums — what is acceptable or unacceptable, how roles are enacted, whether a sense of collective identity emerges among participants, and the ways of speaking and acting that provide structure and facilitate common understanding. Language games are systems including words, actors, and actions; hence, our analysis focuses on the words used and how they are used (i.e., the linguistic styles), the actors (i.e., the participants and the roles they take on), and their actions (e.g., how do they interact with one another? Do they greet each other? Do they thank each other? Do they ask questions? Do they provide information?). The literature on communication, organizations, and online communities focuses some of our analysis. Hence, we focus on linguistic style, roles, legitimacy and authority, and collective identity.

First, we follow Grover (1993) and others (Myrsiades, 1998; Topp, 2000) as we describe the *linguistic style* of the discourse, which is obviously a central dimension for the analysis of language games. The distinct linguistic traditions of a group — stylized vocabulary and communication practices — emerge across all or a meaningful subset of a group's messages. Linguistic style refers to the governance of speech within the online forums, defining what is acceptable or expected of players as they participate in the game (Grover, 1993; Myrsiades, 1998; Topp, 2000).

Language games include not only words, but actors or participants, who are using these words and interacting with each other. The roles participants often take on constitute an essential dimension for analyzing a language game, as they define the different players in a game, and thus the types of interactions and behaviors that are allowed and expected. Therefore, following Aldridge (1992) and Ahuja and Carley (1999), we note demarcations of *roles* to identify role behaviors within each forum. Roles are the orchestrators of conversation, integral to the creation of meaning and knowledge-sharing (Kogut and Zander, 1996). They are disclosed indirectly, in the way people behave and others react, and through their persistent use, encourage regularity in behavior (Pentland and Reuter, 1994), thus becoming part of the rules set constituting the language game.

Different players do not necessarily know each other — especially in online forums — so the way they present themselves through legitimacy and authority discourse is crucial in determining the nature of the interactions (e.g., trust) between the different actors (Galegher, Sproull and Kiesler, 1998). Thus, some of our analysis studies the expression of *legitimacy and authority* (Galegher,

Sproull, and Kiesler, 1998). Legitimacy and authority refer to how forum contributors present themselves to other players so as to be accepted and establish influence. Galegher et al. (1998: 499) discuss legitimacy and authority in online support groups at length. They observe that "to obtain direct support and information from others in the group one must demonstrate *legitimacy* — that his or her concerns are genuine and justified." *Authority* occurs when contributors "want readers to believe not only that they have a right to speak, but also that their answers should be believed" (Galegher et al., 1998: 500).

Last, as language games are specific forms of discourse and activities that occur in specific communities, we look for references to a common identity. We examine expressions of *identity* within the discourse to assess coherence among the players and the distinctiveness of the online forum game from other language games of which it may be a part — such as the local geographic culture or larger professional KM community. Online forums' identities act to reinforce social rules of "who we are" and "how we are expected to act" (Finholt and Sproull, 1990). Identity occurs as speakers define themselves in relation to the group, and is found in surface language that conveys intimacy with others, such as reference to "we," "us," or "our group" (Weiner and Mehrabian, 1968; Ashforth and Mael, 1989), or reference to a common, larger community ("our KM professional community"). Identity also may be connected to locale, like one's workplace, homeland, or geographic region (see Festinger et al., 1950; Kogut and Zander, 1996). Common location lowers perceived differences in space and time and serves as a salient basis for feelings of similarity with other members of the group (Ren et al., 2007; Foreman et al., 2008). Expressions of identity reflect rules for coordination and learning in organizations and online groups (Finholt and Sproull, 1990; Kogut and Zander, 1996). We now describe our research method and sites.

3. Method and Research Sites

This paper focuses on a new genre of forums, defined as publicly accessible, Internet-based discussion forums devoted to topics of professional management interest (Herring, 2004; Gray and Tatar, 2004). These online forums — which were not established to produce a product or a service, but merely to share information — present a high potential for cross-organizational information-sharing among managers or other professionals (Sproull and Faraj, 1995; Jones, 1997; Blanchard and Horan, 1998; Butler, 2001). We are particularly interested in these forums because of their potential to emerge as organizations that exist outside the realm of traditional corporate boundaries. Our emphasis in this paper is processual, akin to Wittgenstein's (1969) analysis of the language game of builders (and not of the buildings), or Grover's (1993) analysis of the language game of project management (and not of software or other products of project management). Therefore, we do not aim to describe the language game of KM per se, but rather the game of sharing information on a managerial topic in the online setting, for which these forums provide a venue — across professional, firm, and geographic boundaries. To protect the anonymity of the contributors, the forums and their contributors are referred to here by pseudonyms.

3.1. Data Collection and Sampling

A database of online forums devoted to KM served as our source of online forums for in-depth study. We selected KM as the topical domain, because, as a relatively new area of practice, KM forums attract participation from multiple organizations, and are thus conducive to an analysis of how virtual groups of professionals organize online for information-sharing. The database was created by searching websites known to host a large number of online forums, such as YahooGroups, eGroups, Deja.com, AOL, and msn.com, as well as searching more broadly to identify forums hosted by individuals, businesses, and other organizations. We used search engines including Google, Profusion, and Northern Light to scan for keywords related to the KM theme, such as "knowledge management," "km," and "k-m;" and we reviewed websites devoted to these topics to find online forums. Forums were selected for inclusion in the database if they met two criteria: the stated purpose of the forum was directly related to KM, and messages were archived online. In all, we identified 40 forums, and we downloaded the contents for the five-year period 1996-2001.

Our approach was exploratory, but in order to have a deeper understanding, and because we were

interested in documenting variations in structure and functioning, we selected a varied set of forums among the larger set devoted to KM. To select a small sample for language-game analysis, we used hierarchical cluster analysis to group the forums based on three variables: the average number of contributors who returned each period to post messages (contributor retention), the extent to which contributors participated in other online forums (overlap), and the number of contributors who repeatedly contributed to the discussion at above-average levels throughout the life of the forum (high-volume contributors). These variables are objective measures that have been suggested by researchers as important to profiling online forums (e.g., Smith, 1999; Butler, 2001). Forum size, operationalized as the number of contributors each period, was controlled in the analysis by computing the variables as ratios, where the raw value of each variable was divided by the number of contributors in the forum. Table 1 shows descriptive statistics for these data. We followed the hierarchical cluster analysis method as described by Aldenderfer and Blashfield (1984) and Hair et al. (1998), and the recommendations for applying cluster analysis in organizational research provided by Ketchen and Shook (1996). We standardized values for the variables to create common units of measurement, tested for outliers (resulting in no elimination of cases), selected the squared Euclidean distance as the similarity measure, and used Ward's algorithm in a hierarchical procedure to identify clusters. We identified three major clusters, and we checked for the robustness of this solution through a random entry of cases into a second clustering procedure: The cluster orderings were different in the random solution, but the results (cases composing each cluster) were otherwise identical. We selected three forums (which we call IT&KM, KM Forum, KM Chapter) for discourse analysis based on their closest proximity to the mean values (centroid points) of each cluster. We believe this will provide a rich and diverse empirical framework to understand the emergence of organizational structures in an online context. We were also interested in seeing whether and how forums corresponding to different clusters develop a specific language game.

Table 1. Means, standard deviations, and correlations (significance level) between variables used to cluster analyze 40 online forums devoted to knowledge management

Variable	Mean	S.D.	1	2	3
1. Contributor retention	2.48	3.4	1.0		
2. Overlap	1.66	2.3	-.13 (.42)	1.0	
3. High volume contributors	7.22	10.9	.26 (.11)	-.23 (.16)	1.0
To control for forums' size, all variables are ratios where variable = variable/contributors.					

Data analysis

We limited our discourse analysis to the first nine months of content in each online forum, starting with its founding. We believe this approach provided sufficient data to document the development of the language game in a critical period of the forum's life, and yet was also manageable for an in-depth case study. In all, the dataset of the three forums included 811 messages. We numbered each message, with numbers in parentheses referring to messages, and sequentially ordered them for each forum. Wittgenstein (1953) cautioned against exclusive reliance on word counts or atomistic analysis of sentence structure, instead emphasizing the importance of describing the holistic nature of discourse and ongoing routines or patterns of speech. With this in mind, we undertook an in-depth longitudinal discourse analysis (per Herring, 2004), segmented by time.

In order to facilitate a developmental analysis and the organization of the results, we divided the text of each case into three time blocks corresponding to the early (Phase 1: founding through month 3), middle (Phase 2: months 4-6), and later (Phase 3: months 7-9) periods of each online forum's development. As there was only one message posted during the first three months of one of the forums, IT&KM, in order to have enough data to study the emergence and development of the

different dimensions of its language game, we decided to extend the first period to include the first six months (which we still call Phase 1 for practical reasons). For IT&KM, Phase 2 represents months 7-9, and Phase 3 represents months 10-12.

Our approach was exploratory, intended to generate insights into the development of these three forums. We used inductive qualitative techniques to conduct the analysis (Glaser and Strauss, 1967), which we completed in four main phases. First, we developed notes for each case, which we then compared, clarified, and further expounded to yield the final case study for each forum. We then summarized each case in a condensed synopsis. Second, we iteratively and qualitatively analyzed the discourse of the complete text of the 811 messages that composed the three forums. Analysis consisted of multiple readings of all the messages by the first author, with regular discussions with the second author to adjust and refine the dimensions. Numbers in the text refer to the number of the message in the forum. Looking for patterns of speech related to each dimension described earlier, we hoped to integrate these into a comprehensive understanding of the forum's overall language game.

A set of questions, derived both from the literature and from our analysis, informed our documentation of each dimension. For example, many of the stylistic features have been described in previous research (e.g., Ferrara et al., 1990; Baym, 2000; Herring, 2002). However, our reading of the data led us to add feedback as a dimension included in the linguistic style. Similarly, while research on collective identity informed our analysis of collective identity (e.g., Weisner and Mehrabian, 1968; Ashforth and Mael, 1989; Kogut and Zander, 1996), the notion of embodiment emerged from our analysis of KM Chapter's discourse. Last, as mentioned earlier, each of these dimensions corresponds to dimensions of language games. Appendix 1 details the questions informing our analysis of the forums' discourse.

As we reviewed the text, we noted specific messages and message sequences that corresponded to each of the four dimensions. We grouped those from similar dimensions together to identify patterns. To integrate the results of this longitudinal analysis, we used a cross-sectional approach and developed detailed tables for each online forum, documenting the occurrence of discourse related to the dimensions, and highlighting similarities and differences across the three forums. Eventually, we reviewed the notes, cases, and tables to develop a generalized description of the language game of each forum, as well as their commonalities.

3.2. Profiles of the Forums

The three forums we analyzed were founded between July 1998 and August 2000. None required a fee to participate, and all were accessible via the Web. One was part of a larger portal site, whereas the others were strictly discussion groups with no other resources offered. Despite similar founding conditions, the forums varied considerably in their eventual number of contributors, message contributions per person, and other basic communication patterns. Tables 2 and 3 summarize key attributes of each forum.

Forum	Founded	Still active?	Part of portal site?	Access mode	Fee-required?	Contributor retention ¹	Overlap with other OLFs ¹	High volume contributors ¹
IT&KM	Jul 1998	No ²	Yes	Web	No	0	0.11	1
KM Forum	Aug 2000	Yes	No	Web/message	No	37	2.78	7
KM Chapter	Dec 1999	Yes	No	Web/message	No	65	0.67	20

¹ based on average values for the 9-month period of the study

²As of this writing, IT & KM is available on the Internet to view and post messages; however, the most recent posting was made on February 15, 2003.

Table 3. Total contributors, messages, and message types for the first nine months of the three online forums

Forums	Contributors	Messages	Discussions	Replies
IT&KM	21	27	18	9
KM Forum	141	332	207	125
KM Chapter	183	452	177	275

The forums are displayed from smallest to largest, in terms of total messages and total number of contributors. A *message* is the basic unit of communication, and each message has one contributor associated with it. *Contributors* are the people who post the messages. Because retention in online forums is low, the average number of messages per contributor also tends to be low. For the three online forums we studied, the ratio of messages to contributor was lowest in IT&KM and highest in KM Forum; the values for these ratios are typical for online forums (e.g., see Galegher et al., 1998; Smith, 1999). *Discussions* are messages that start a new subject — or topical thread. *Replies* are messages posted in response to an existing thread. KM Forum generated more discussions than the other two forums; however, KM Chapter generated the largest number of replies.

All of the forums started out with just a few contributors during the first month, but growth in contributor numbers was notably greater in KM Forum and KM Chapter than in IT&KM. This is not to say that IT&KM died, however, because new discussions were started, and beginning in month four, there was a steady rate of about four messages per month. The discourse in KM Forum appeared to emphasize breadth (posting of new topical threads), whereas the discourse of KM Chapter emphasized depth (replies to a single thread). Meanwhile, the discourse in IT&KM, though steady, remained very lean, with few contributors — a maximum of five cumulative discussions per contributor — after nine months.

We also noted whether the contributors appeared to be from a dominant geographic locale. IT&KM had a founder from France and was mixed-language, with some messages in English and others in French. Contributors to KM Forum and KM Chapter were dominantly located in India and Australia, respectively, with all messages in English. Overall, the forums started out on relatively equal footing, yet they attracted a slightly different mix of people, and their discussions took on different growth patterns. These descriptive profiles beg the question of how the language games of the forums differ.

4. Findings

Our discourse analysis shows that each forum created and enacted its own language game, with its own linguistic style, roles, interaction patterns, and a more or less developed sense of collective identity. However, although each of these forums presents a specific language game, there are some similarities between them, which allow us to describe them as being part of the same *family*. Each of these language games has been developed by participants in online forums with a similar topic of interest, KM, and a common aim: exchanging information and knowledge. In this section, we present the three language games developed within each forum. We then highlight their similarities and their differences. We provide tables of our findings for the four analytic dimensions corresponding to each case in Appendix 2.

4.1. Three different language games

Our research suggests that online forums devoted to the same topic and starting at a similar time can develop very different language games. In our case, we observed three different language games: the *kiosk*, the *club*, and the *neighborhood* (for a summary of the language games, see Table 4).

IT&KM: the kiosk language game

IT&KM offers the simplest game, with very lean conversation and short, cogent messages. There are few participants, and no explicit or implicit roles are enacted. Interactions are simple: people do very little relationship-building, they give few details on the context of their query or comment, and they do

not stir up discussions. Most of the time, people post one question or piece of information, or sometimes reply to a post. The forum feels like a *kiosk* or a bulletin board. Below we describe the game in more detail, along the four dimensions previously defined.

Linguistic style

In IT&KM, all the messages are short, have no signature, and include no legitimacy discourse or relationship-management. Hence, in Phase 2, out of 14 messages, there are four messages by student researchers who either sign their posts or use some legitimacy indicators (e.g., introducing themselves). There are only two messages with a signature (not a signature file, just first name). About half of the contributors do a minimum of relationship-management (“hello,” “thank you”). Messages include relatively broad queries, such as, “I would like to exchange some information with you about lotus notes (sic) and domino (sic) 4.6” (4), and “Is sound management only finance and accounting?” (10). For the most part, replies tend to be as succinct as the queries, pointing out web sites, stating brief opinions, or offering to send a report or other information.

Roles

Apart from the founder, who posts one other message after the founding message (and does not really enact any role per se), players do not seem to have clear roles. An average of one contributor returns each month, but no core group of contributors emerges. Players in this language game post one question or comment, and rarely reply. There is no role differentiation and, thus, no evidence of organizational structure in this forum. There is no moderator (at least that we could see). Only a few participants try to stir up the discussion or ask for feedback. Since roles can be described as orchestrators of conversations, that explains why in IT&KM there is no feeling of a conversation, but at most a cacophony of voices not necessarily talking to each other.

Legitimacy and authority

In IT&KM, where roles are undefined, most of the participants do not present themselves, and there is only one participant who refers to her previous experience while replying to a posting. A notable number of contributors are student researchers. These contributors either introduce themselves or mention that they are studying KM in the text of their message. When they do sign, participants just use their first name and no signature files. Most have no greeting and include no legitimacy statements (such as references to prior experiences or the online forum message history). Only four messages include any legitimacy or signature, and these are all from student researchers who are requesting information about KM for their studies. The students introduce themselves and sign with their first name. Many messages conclude with a brief “thanks,” but otherwise there is no evidence of using linguistic style to develop informal or personal relationships among contributors.

Collective identity

There is no evidence of, nor reference to, group identity, but instead a feeling of one-at-a-time posts. Conversation is sparse and continually involves new contributors. Often, newcomers join existing discussions rather than create new threads, suggesting that they are taking the time to read (at least some) of the discourse before joining in. Messages posted in Phase 2 receive replies in Phase 3. Looking forward in this forum, we note that it is common for newcomers to reply to discussions initiated months, or even years, earlier. Still, the forum has a sense of organized discussion that slowly builds over time. There is some depth to the discussion, in that contributors place their comments into established topical threads or start new ones. It is a sparse yet ongoing conversation of transitory visitors punctuated by periods of silence.

Although IT&KM Forum’s language game is unsophisticated, the forum is successful in that the game survives. (We note that this forum remains active for five years before going silent.) Social networks do not form. Instead, the game serves as a sort of information *kiosk*, or bulletin board, where people post messages when they have a technical problem to solve. Visitors presumably gather the bit of information they seek, or provide information for another person, and then move on. Despite limited interactions, the forum appears to be an efficient game for dealing with focused technical and managerial information.

KM Forum: the club language game

KM Forum's language game is more complex in terms of linguistic style, number of participants and roles taken on, and interactions and implicit rules to know. Participating in this language game is, thus, more complex than in IT&KM. For example, before contributing one needs to read prior postings and link one's comments to them, as well as exercise small rituals of politeness — introduction and so forth. We call it a *club*, i.e., a group of people involved in Knowledge Management in India, who want to join KM Forum to network and discover who is "in the know." Hence, they visit frequently and seem to benefit from the association with those in the club.

Linguistic style

The style of KM Forum is polite and informal. People greet each other, sign their messages (many use signature files), thank people in advance, etc. Contributors also give positive feedback to one another, particularly in Phase 2 and Phase 3. There are several aggressive messages and some argumentative discussions, but overall the tone is polite and positive. Participants have developed their idiosyncratic communicative practices, such as a forwarding pattern, the use of parentheses, heavy use of positive feedback, and references to previous messages. The heavy use of parentheses creates an oral style. There are quite a few messages that are forwarded to the group. The forwarding pattern could be interpreted as an attempt to build community: let's share what we have if we think it can be useful to all. The reference to other messages ("This is in response to S's message...") can be interpreted as a way to establish legitimacy and authority: the contributor, by referring to another message, shows that her message is connected to the forum's discussions and also shows that she's part of the group and is aware of what discussions are going on in the forum. This pattern also creates the sense of a lively discussion (where messages are interconnected) as well as the impression of a network of participants.

Roles

The founder of KM Forum plays a key role. His signature is "Gopal, Owner and Moderator – KM Forum of India." He is the most active participant, and he moderates as well as facilitates the forum. In one message, he informs them that he is going to be offline, and he reminds them of the rules of the forum: "Dear all, I am not going to be accessing the net or mails, over the next three weeks, hence am making the group unmoderated. Please keep in mind the objectives of the group, and if somebody violates them, please do not hesitate to remind the person of the same. Keep the spirit of the group and take it higher" (344). He has an important role in building up the community, praising the growth regularly, e.g., "We are finally in double digits..." (6). He often sums up discussions and tries to push them forward: "Thanks Jyoti and Pushan for your responses. I am rephrasing your responses along with my doubt..." (143) or "So what do you think? Are ontologies a part of our KM life yet?..." (261).

In Phase 2, a discussion arises on the role and necessity of having a moderator, following an aggressive exchange of messages. Gopal indicates that he is not a moderator anymore, but nonetheless acts the part by stating rules and advice: (167) "When this egroup was started it was moderated so that such occasions do not occur. When they did not I made the group unmoderated." Yet, until the end, he more or less keeps moderating the forum, and his role as (de facto) moderator provides a sense of stability over time.

Despite the central role of Gopal, there is a small core group of active participants who give and ask for feedback, including Reit, a consultant who becomes the second most active poster in Phase 2. Along with Gopal and Reit, several contributors post three or four messages in Phase 2. In Phase 3, four participants start to facilitate, stirring up involvement, and creating a core group of five contributors (including Reit but not Gopal). There are many references to well-known professors, some joining the forum, accompanied by enthusiastic welcoming messages such as, "It gives me a great pride and pleasure to welcome Dr. M.S." There is no reference to an organizational structure, apart from references to Gopal and his active involvement in the forum's life.

Legitimacy and authority

In KM Forum, where roles are more defined, many contributors use legitimacy and authority in their

discourse (mostly introduction of self and/or concrete references to work projects or experience in KM), although not pervasively. Information-seekers give details on their interests and the context of their questions. Those providing information give extensive explanation. Participants often present themselves when they post a question: "Hello this is just to introduce myself. I have joined KM Forum sometime back. I am with the Institute of... in the HR/OB area. KM is something of interest to me and I would like to learn more from this egroup discussions..." (141). Some also use authority discourse when they reply: "I actually used this technique quite successfully" (341). Newcomers typically refer to their electronic participation when they post their first message, often admitting that they have been lurkers for a while.

Collective identity

Contributors seem to share a strong feeling of being part of a community. Gopal sets the tone with frequent messages praising the growth of the forum, especially in Phase 1. Participants often refer to the group ("I wish all members a happy new year"; "members of this egroup"; "people of this community"), and tend to use general greetings such as "Hi all," or "Dear OLF 25 members," or use "we" to refer to the group — especially in Phases 1 and 2, which are two important phases in building the community. Participants often refer to the group as a community with a common aim: to share. "Thought it would be interesting for the group," (27) or "Nice to see this group churning rich thoughts" (85).

Community building is a key topic in Phase 1, with Gopal's messages often reflecting on this development by hailing the latest number of participants. In Phase 2, there are many references to a common identity, as well as some discussions about behaviors that are acceptable in the forum. There is a lively discussion on the nature of a healthy discussion, the role of the moderator, and appropriate behaviors for the forum. A newcomer posted a message indicating that he felt lost and disappointed by the exchanges he read on the forum (152): "My experience over the last three months has left me more confused and ignorant than before...". One participant replies to this with a nasty and aggressive message, which leads to a discussion on appropriate messages and the definition of the forum. Participants agree on the importance of being open-minded and polite and the key role of the moderator.

It is clear from the messages that it is an India-based community – from the names, the signatures, and some explicit geographical references, as in the founding message. It seems that a lot of people know one another, at least by reputation, but there are no references to off-line meetings. The forum's geographic identity in India bounds its scope and provides a common ground for those who participate.

KM Forum evokes a *club* with a president, some key members, shared practices, and a common aim — to share best practices and develop knowledge management in India. As one contributor notes: "the best use of this forum is to share practical experiences... a group like this serves as solace, sounding board (virtual friend, philosopher and guide)" (159). The forum provides lots of opportunities to discuss personal issues and pursue career advancement. Some of the participants have met and work in the same company; others seem to know each other by reputation even if they have not met. Experts are highly regarded and receive special recognition when they join. Participants discuss a wide variety of KM concepts, definitions, technology, and so on. "Hi All, Could you share your practical experience on COPs as how its being implemented in your Company etc?" (117). There are opportunities to discuss a wide range of KM-related topics and issues, to relay ideas or questions, and to pursue career or general work advice. Still, there is a welcoming atmosphere to all, a goal to grow the size of the club, and plenty of information about groups, forums, books, and events that may be useful to visitors. Scattered about the many, varied threads are several deep, nuanced conversations that debate the meaning of KM concepts and how to best implement them. The philosophy of the forum, as Gopal notes, is to become a locale for exchange and "sense making" (155). In this manner, the game moves well beyond providing information, per se; it is a source of networking among a loose collection of professionals whose discussions explore KM definitions, principles, and implications.

KM Chapter: the Neighborhood Language Game

KM Chapter has the richest language game among the three studied, offering a sense of community in the “strong” sense of the term, including a feeling of bondedness and a high degree of social interactions (McMillan and Chavis, 1986). The atmosphere of the forum is like a *neighborhood* in which players can readily drop in and leave at their convenience, informally interacting with whoever is around at the time. There are many players and quite complex interaction patterns that we describe below.

Linguistic style

In KM Chapter, the discourse style is friendly, informal, and professional. People typically sign their messages, almost always with their first name but often with their complete name, position, organization, and location information. Several messages use smiley symbols or include comments showing intimacy among the participants. At times the discourse has the feeling of a synchronous chat — a conversation of “pop up” messages with a few lines or words and no need to introduce oneself or set the context. For example, people reply immediately or use very time specific greetings (e.g., “Good morning”). Immediacy is reinforced through the informal and friendly tone of speech: “Hi all, I can’t resist that one” (82); “Jeew, even now!? This describes my schooldays in the sixties!” (111). People sometimes post only a few lines, without setting up the context or stating who they are; the assumption is that everybody knows them. Contributors make heavy use of parentheses to make extra comments, and this reinforces an oral style. Smiles and capital letters are used often to express emotions (whether gratitude or tensions). Messages sometimes refer to other messages, generating a feeling of a shared history and lively discussion. Most of all, participants give a lot of positive feedback, either thanking each other for their messages or saying how interesting and/or useful they found prior messages. These messages create a strong feeling of being part of a community: “This is an excellent idea”; “I agree”; “Great idea”; “I am fascinated by TM’s explanation”; “Hello, looks like a great group and a great idea.”

Roles

In KM Chapter, the founder, Sam, is the most active contributor, but interactions and roles seem to be quite evenly distributed among a core group of participants. Sam moderates the forum and facilitates discussion. In message 156, he gives an update of the number of members and forwards an extended version of the founding message, explaining the aims of the forum, its structure, and “rules.” He is in charge of calendar issues, starts discussions on the forum name or netiquette, and creates polls, welcomes new members, and manages the group repository. He is perceived as a key actor in the forum as this posting attests: “Hi Sam, congratulations on the continuing success of the KM Chapter group ☺.”

Yet, there is a core group of active contributors, and the facilitator role is shared among several members who guide discussion. For example, in Phase 1, Tom, a consultant, is the most active contributor. He posts “The KM snips of the day,” which are mainly extracts of articles and books, most with no comment. At a certain point in Phase 1, the majority of the conversation is between Tom and individual contributors who comment on his snips. Tom is at the center, dominating the forum. Also in the first six months, people refer to some thought leaders, e.g., “Karl-Eric Svieby and other KM notables” (78) and “James March as a pioneer guru ... and another guru of mine...”(139), but such references are not extensive, and disappear in Phase 3.

Organization structure is evident in explicit references to roles, rules, and relationships (moderator, organizing committee, KMChapter@ messages, important events like the inaugural workshop). There are several references to an organization structure in Phase 1: Sam refers to the coordinating committee (143) and to Anita, “our secretary [who] manages the list” (156). In Phase 2, the organizational structure becomes clearer as messages start to be posted by an “administrative” address, KMChapter@. Moreover, Anita, who was already active in the management of the meetings in Phase 1, is even more active. She sends reminders and complementary information (e.g., venue or time change) for the meetings. The facilitating role is shared among Sam and several other contributors, especially Paul and Benjamin, who also play a role in the management of the forum. At one point Sam asks for volunteers to present at the monthly meetings and receives many positive

replies, which shows the commitment of the participants.

Therefore, despite the key role of Sam, roles are shared both from an organizational perspective (e.g., sending information regarding the technology, meetings, and events) as well as from a content perspective (stimulating lively discussions).

Legitimacy and authority

Legitimacy and authority enter the discourse but not extensively, and usually in reference to past projects. Comments such as these are rare: “I hope these comments and my experiences ... may assist you...,” (338) “When I started as a regional manager with ABC 5 years ago...” (566). Few people introduce themselves. This might, in fact, be done in offline meetings. Most participants sign their messages, but the pattern varies (either first name, first and last name, or signature file). In Phase 1, there is a whole discussion on the importance of presentation of self and of the need to fill in the personal information section. Sam posted a message (8) at the beginning inviting people to do so. It seems that many members did not fill it in. One explanation for this difference between KM Forum and KM Chapter might be that in KM Chapter, participants meet regularly, and, therefore, know each other.

Collective identity

A strong sense of community pervades this forum right from the beginning, through general greetings (“Hi all,” “Hello, looks like a great group”, “We as a group”), the use of the collective “we” and general greetings such as “Dear Kmeters,” “Good morning all,” “Dear KM Chapter people,” and through an informal and friendly style of speech. There are some references to the larger KM community, to the Australian context, and to the public sector, but not many. Most references are to the forum itself. However, there are many references to physical locations and face-to-face meetings — especially to their monthly meeting that become central in Phase 2 and Phase 3 — and many contributors invite other members to contact them offline.

There are many reflective discussions on the community itself. Phase 2 is a key period in terms of community building. There is an extended discussion concerning the name and the focus of the group (public sector only or more; national or global): “Should we change the name of our group to the Public Sector KM Forum to emphasize our public sector interests and de-emphasize the geographic boundary?” (199). After many discussions and a poll, Sam concludes: “The result is inconclusive... I think I have convinced myself that a name change is unnecessary. We just need to build the online community so we all benefit from great discussions online.” (251). There is also an important thread on netiquette. There are several references to the Australian context, yet some contributors emphasize the general nature of the discussion. Hence, one contributor notes: “The online community is obviously unconstrained by geographical boundaries and I’m certain there are other KM practitioners who are interested in public sector KM issues and who reside outside the AT” (251).

In Phase 3, the sense of a community seems enacted, and there are no more reflective discussions on the name of the forum or netiquette. Messages referring to face-to-face meetings (announcements, reminders, asking for speakers, providing logistic information) are pervasive. Many refer to what has been discussed in previous meetings, or plans to discuss some of the issues mentioned online in future meetings. Thus, the face-to-face community seems to have become an extension of the online one.

With its conversational tone, chat-room atmosphere, and increasing embodiment, KM Chapter has a feel of a *neighborhood*. It provides informal, chat-like discussions, as well as some rich discussions of KM practices — such as a thread on Milan family therapy and how it applies to KM, and discussions on rewards and incentives for KM. There is a strong and active core group in this forum, but at the same time, opportunities for newcomers to participate are plentiful. Participants can contribute to online polls, join discussions of KM concepts and principles, share project experiences, and/or attend offline events that are announced in the forum. Building social ties is important in this forum. Participants are expected to speak in friendly and frank terms, to disclose information about their opinions or work projects, and in general, to talk to others as if they know them. Taken together, the

play of this game creates a sense of intimacy, trust, and enjoyment for those who participate.

4.2. Language Game Resemblances and Distinctions

Through description of the discourse, we identify the emergence of language-game patterns in the three forums. Table 4 provides highlights of the language games of each forum, revealing family resemblance and distinctions. The forums quite obviously share a common interest in discussion of the Knowledge Management theme, and we note that each sticks to this theme throughout the course of its development. New topics for discussion are continually introduced, but contributors almost never stray from their core concern with management and technology issues related to KM. In all of the forums, the establishment of the language game takes hold quickly, in a matter of months. Further, the forums resemble each other in their informal and direct style of conversation. Each forum has some degree of geographic identity, but is open to anyone, and each experiences a steady stream of newcomers over time. To the extent that these forums all include information-sharing, they are locales for learning that promote electronically linked exchange among players who otherwise would not regularly interact with one another. Hence, these three language games seem to be part of the same family: *the language games of online forums*.

But beyond these general commonalities, the online forums vary considerably in their complexity, i.e., number of players, interaction patterns, and (implicit) rules of participation. Each forum has its unique language game that corresponds to a different form of organizing, which we argue occurs through the enactment of the language game.

Table 4. Summary of language games for the three forums

	IT&KM	KM Forum	KM Chapter
OVERALL GAME PROPERTIES (types)			
Game metaphor	Kiosk	Club	Neighborhood
Game complexity	Simple	Rather complex	Very complex
Goal	Question & answer board	Growth in contributors; establish an open network for information sharing	Build a supportive professional group of colleagues add something
GAME STRUCTURE			
Major players	None (all participants play the same role)	Founder is central to the game, but anyone can post a facilitating message. Gurus are present to provide sage advice.	Founder, secretary, coordinating committee, organizing committee, executive members.
Location of players	Anywhere. French-speaking participants are welcome.	India	Predominantly Australia, but anyone can participate.
Core group of players	None (no one dominates)	Small, easy to penetrate by contributing to the OLF	Large, penetrate by becoming active in the organization as well as the OLF
Content activities	Questions, comments, replies on KM technology and administration	-Discuss KM definitions and concepts. -Introduce new people into the group and encourage the group to be active in other KM groups/ activities. -Pass outside information onto the group (articles, book reviews, bibliographies, links, etc.	-Discuss KM definitions and concepts. -Share specific project experiences; seek and supply advice on concrete problems. -Seek or supply advice on meeting or organizational logistics. -Respond to polling questions with your views.

Table 4. Summary of language games for the three forums (continued)

	IT&KM	KM Forum	KM Chapter
OVERALL GAME PROPERTIES (types)			
(Implicit) Rules			
—of interactions	Keep it short, clear, and to the point.	Review the discussion before participating and refer to it when you join in. Long messages with pasted material from other forums are welcome.	Very long messages with your thoughts are welcome, but avoid a lot of pasted material.
—of style (message structure)	No formal rules	Be aware of behavior that is acceptable or not in the forum. Convey a tone that is open-minded, respectful, polite.	Read the netiquette “rules” as posted by the Founder. OK to disagree and challenge others, but be friendly and polite.
—of style (greetings, features, feedback)	Keep the discourse informal. Do not request or expect immediate feedback.	Keep the discourse informal and inclusive. We want to grow and be welcoming to all. Positive feedback is essential.	Keep the discourse informal, even personal. Say what you really think, disclose information about your work, and have fun with others. Be welcoming of newcomers.
—of roles	Anyone can play	Founder moderates and facilitates. If he becomes inactive for a time and others dominate, the group will call on him to moderate and facilitate.	-Founder moderates with assistance from a secretary. -Founder is primary facilitator, but anyone can try to facilitate. -An organization that supports the OLF provides structure.
—of legitimacy and authority	No need to introduce oneself or sign messages	Introduce oneself, refer to work experience, projects and/or KM experience. Sign messages with full signature information.	No need to introduce oneself or refer to work experiences. Sign with as much (full signature file) or little (given name) information as you prefer.
—of identity (collective language)	Do not formally address individuals or the group.	Address the group as a whole. Express positive feelings toward the group.	Use friendly greetings. Address an individual or the group as a whole. OK to omit address if the group is in “chat” mode.
—of identity (embodiment)	Do not refer to specific places, events, or meetings of participants.	OK to announce seminars and general meetings, but do not use the OLF for meeting planning.	OLF generates interest in meetings and is a place to follow-on with discussions after meetings. Be welcoming of newcomers and urge them to become involved, both online and offline.
—of style (message structure)	No formal rules	Be aware of behavior that is acceptable or not in the forum. Convey a tone that is open-minded, respectful, polite.	Read the netiquette “rules” as posted by the Founder. OK to disagree and challenge others, but be friendly and polite.
—of style (greetings, features, feedback)	Keep the discourse informal. Do not request or expect immediate feedback.	Keep the discourse informal and inclusive. We want to grow and be welcoming to all. Positive feedback is essential.	Keep the discourse informal, even personal. Say what you really think, disclose information about your work, and have fun with others. Be welcoming of newcomers.

Temporal development of the language games

In the three forums, the establishment of the language game took hold quickly. By the third month, the routines seem established, and, for the most part, differences between the second and third phases are minimal. This observation is in line with studies of groups that show that they form patterns

quickly that persist for some times (e.g., Gersick, 1991). Yet, while the three forums seem to define their “deep structures” (Gersick, 1991) rather quickly, there are important variations across them. IT&KM develops a very simple language game, and there is little change in the patterns of activity during the period we studied. On the other hand, KM Forum and KM Chapter evolved during the first nine months, even if most of the patterns were established in the first and second period we studied. They are likely to continue to mature and change – with Gopal’s role becoming more formal and central in KM Forum and with the development of multiple roles and the increasing participation of different members of the community in KM Chapter.

Despite striking similarities in their development, KM Forum and KM Chapter vary in their developmental structure. Some variations emerge in KM Forum over the three periods. As suggested in previous research (Fayard and DeSanctis, 2005), the three periods correspond to the three first development phases described by Tuckman and Jensen (1977). The first period corresponds to a formation period, during which the forum is attracting members, the founder is celebrating growth, and routines of conversation start forming among participants. Phase 2 is a reflecting, or norming period, during which there are many discussions about netiquette and the forum’s aim. Roles and expression of identity become routine, and the interaction patterns enacted in Phase 1 are maintained. The last period is a stabilization period in which the language game established in the two previous periods is maintained and reinforced.

We anticipated that the exact sequencing of the phases would vary across forums, depending on the players, their actions, and the rules of the language games (Fayard and DeSanctis, 2005). Our analysis concurs with this view, as the three developmental phases we noted for KM Forum are much less marked in KM Chapter. If Phase 2 is also a reflective period (norming) for KM Chapter, with many discussions on appropriate behaviors, the name of the forum and its aim, several discussions on appropriate behaviors already took place in the first period. Hence, KM Chapter’s development is more similar to Gersick’s punctuated equilibrium model (1991), as the language game is enacted right from the beginning, and variations are much more subtle than in KM Forum.

While Tuckman and Jensen’s linear development model (1977) and Gersick’s punctuated equilibrium model (1991) are often opposed, some research (e.g., Chang et al., 2003; Dennis et al., 2006) suggests that these two models are complementary. Dennis et al. (2006) argue that the different developmental paths taken by groups depend on whether members share common scripts of the group’s work processes. This does not seem to be a relevant dimension to explain the variations between the development of KM Forum and KM Chapter, as in both forums, members did not share common scripts prior to the birth of the forum. Yet, we noted the importance of embodiment and face-to-face meetings for KM Chapter. Such interactions might have facilitated the sharing of common scripts and the development of the KM chapter forum language game, while members of KM Forum needed to follow the stages model to enact shared scripts and their language game. Future studies could investigate this hypothesis.

Future research should focus on the temporal development of the language games to analyze whether the different development patterns can be associated with the different language games. For example, do club language games tend to follow the linear development model of Tuckman and Jensen (1977) while neighborhood games follow the punctuated equilibrium model of Gersick (1991)? Our analysis does not allow us to answer such questions. Yet, it suggests that leadership and how it is enacted might influence the developmental process. Indeed, in KM Forum, the founder /facilitator Gopal plays a key leadership role, welcoming newcomers, stirring up the discussion, setting the patterns for greetings and closings, and, in general, building the stage for lively interactions and possibly inducing the different developmental phases, while in KM Chapter, leadership is more distributed and the core group bigger and more involved.

While the three language games are enacted in the first three months, they vary in their development. It seems that each language game is associated with a specific developmental pattern. For instance, the leadership role taken on by Gopal in KM Forum might influence its development, which follows the linear development model of Tuckman, while the shared leadership in KM Chapter is associated with

a punctuated equilibrium model. Surprisingly, IT&KM Forum's development, which does not involve any leadership – individual or shared — follows the punctuated equilibrium model like KM chapter. However, while IT&KM Forum's language game is simple and does not mature, KM Chapter evolves with the emergence of an organizational structure and an increasing involvement of members. This difference highlights the importance of roles and leadership in the development and the structure of the language games.

Enacting organizational structure through language games

We observe a skeletal organization in the case of IT&KM; little expression of legitimacy and authority, and no developed sense of identity. This forum relies on a patterned linguistic style of short, dry messages with simple greetings and closings — established early in its life — to provide the necessary rules to keep the forum active and sustain its long-term existence. More sophisticated forms of organization are evident in the other two forums. In KM Forum, multiple roles emerge (most of them enacted by the founder), and the forum includes an active core group of returning contributors. Expressions of legitimacy and authority, coupled with a well-developed linguistic style, provide additional structure and enrich KM Forum's information-sharing environment. Further, KM Forum establishes a sense of identity early on that is directly tied to its national culture, and linked as well with the larger "KM professional community."

The third forum we study, KM Chapter, has the most sophisticated set of organizational properties. This forum enacts an extensive set of roles, including committees, and develops a large core group of participants. In comparison to KM Forum, this one relies less on legitimacy and authority to provide its structure, and instead develops a strong, coherent organizational identity. Although tied to national and professional KM interests, organizational identity in KM Chapter is sufficiently separate, so as to provide a stronger boundary between the forum itself and the larger social groups of which the forum is a part. Embodiment, more than common national culture, provides an important basis for identity formation in this forum. Like the other two forums, the patterned linguistic style of KM Chapter is established early on and is informal and friendly in tone. But the routines of speech in KM Chapter are notably different, including a mix of both the long presentation of ideas and short interactive sequences along the lines of a simultaneous chat.

We note that while IT&KM is quite different from the other two, the language games of KM Forum and KM Chapter share some common features such as interaction patterns like giving feedback or referring to the group. IT&KM has only developed a skeletal organizational form, while KM Forum and KM Chapter have developed more sophisticated forms. One game is not necessarily superior to the others; they are just different, fostering different kinds of environments for information sharing.

Implications for information sharing and learning

Although our analysis does not directly examine learning, the social dynamics of the three language games suggest that different forms of information sharing are being fostered via the emergent rules of each game. In IT&KM, information processing is taking place, in the sense that there is an ongoing process of information seeking and distribution (Huber, 1990). However, information sharing is not equivalent to the co-construction of joint understanding, which is more evident in KM Forum and KM Chapter. The latter two forums place emphasis on social relationships, not just information exchange. Locational identity serves to reinforce common ground among the participants, and, in the case of KM Chapter, to foster their offline interaction. This is consistent with the results of experimental studies that find that group members like each other more when communicating face-to-face vs. electronically (Weisband and Atwater, 1998), and that common location serves as a salient basis for feelings of similarity with other members of the group (Ren et al., 2007). Depth of discussion is considerably greater in KM Forum and KM Chapter compared to IT&KM, and it is particularly pronounced in KM Chapter. Participants in KM Chapter receive, give, and circulate information while engaging in a mutual construction of meaning. There is not only information seeking and reply, but evidence of "listening," as contributors refer to each other's remarks and build rich threads of conversation over time. There is more evidence of reciprocal interest and involvement in each other's comments, and, in the case of KM Chapter, in each other's professional activities, in general.

Hence, each forum, despite a certain number of family resemblances, develops its own language game. It is possible that the language games in these forums will shift directions later, but our analysis of the first nine months of life indicates general internal consistency in the linguistic style, roles, interaction patterns, and sense of collective identity of each forum.

5. Discussion

The primary contribution of our study is to illustrate how the language-game paradigm can be operationalized to provide an analytical tool for investigating the organizational properties of online forums. Wittgenstein's framework has been used by scholars to understand development and action within formal organizations (e.g., Astley & Zammuto, 1992; Rindova, Becerra & Contardo, 2004), but not in the context of online communities. Boland and Tenkasi (1995) argue that the language-game perspective provides a useful model for understanding knowledge formation and sharing in "communities of knowing" — which rely on electronic communication, but are not necessarily online communications — and offer some guidelines for designing information systems to support knowledge work. Our in-depth case studies provide ecological validity to their theoretical model. In that sense, our paper complements their approach, as it provides three cases of online learning forums and shows how different language games are enacted in these communities.

All online forums start by offering an electronic place where people can "go" or "drop in" (Harasim, 1993). But it is not the social space that shapes a forum's environment or constitutes its organizational form. Rather, it is the unfolding discourse among contributors. To date, most scholars have attended to the differences between newer online settings and their more traditional face-to-face counterparts. Our research reveals the variety of forms that online settings can create as a function of their language game. We suggest that these differences cannot be explained by medium alone, for even among forums composed of managers and professionals discussing similar topics, distinctive language games emerge. Through their language and actions, contributors develop a certain linguistic style, which governs their speech; they take on roles, exhibit legitimacy and authority, and develop implicit rules regarding their interactions; and they use expressions of group identity to provide coherence and support for coordination. These dimensions offer a starting point for the systematic analysis of online forum development and for comparative analyses across electronic venues.

Despite an increasing interest in understanding the performative nature of language in online contexts (Kolko, 1995; Herring, 2004), there are only a few studies providing empirical evidence. Our paper contributes to this literature by presenting three case studies illustrating how online forums organize through the enactment of a language game. Moreover, while our study focuses on online forums, our analysis suggests that the language game framework offers a powerful lens through which to analyze other forms of virtual organizing — from online communities to virtual teams. Indeed, it allows researchers to analyze the interactions (linguistic and non-linguistic) between different participants and provides them with a way to study discourse in order to unveil the social processes by which they organize.

We know that members of online forums, through the process of reading and writing, can engage in sense-making activities (Duin 1991, Harasim 1993). We also know that facilitators and experts can play important roles in stimulating conversation (Gray & Tatar 2004); that demonstrating legitimacy and authority are important activities for lively discussions in online forums (Galegher et al., 1998); and that expressions of identity reinforce social rules (Finholt and Sproull, 1990) and are crucial in virtual organizations (Wiesenfeld et al., 1999). Last, we know that linguistic routines are indicative of organizational structure (Feldman, 2000; Feldman and Pentland, 2003). But little is known about the dynamics of conversations and how these interweave to provide an ongoing, meaningful experience for contributors. Our analysis shows how the language-game framework can provide insight into the organizing process of online forums, allowing us to highlight both their similarities and differences. Our paper suggests three types of language games, which seem to reflect different types of forums — as indicated by the cluster analysis. Moreover, our analysis suggests that despite the variations among the three language games, they all share some *family resemblances*, suggesting a language

game of online forums. Future research will provide more descriptions of language games, generalize our data, and specify the family resemblance for the language of online forums.

5.1. Implications for future research

Our study is limited in a number of ways. We examined only three online forums; our research is confined to a single topical domain, KM, and we studied only the first nine months of each forum's life; the language-game approach needs more elaboration, through further empirical studies of online discussion forums. It would be worth analyzing more forums and different topics to enrich and refine the descriptions of the three language games we discovered: *the kiosk*, *the club*, and *the neighborhood*. Such analyses would provide insight into the generalizability of our findings, sharpen understanding of organizational distinctions among online forums, and contribute to an understanding of family resemblances.

- *Language games formed in online forums can be described in terms of discourse dimensions related to linguistic style, roles, legitimacy and authority, and collective identity. It is a matter of empirical investigation to understand how these dimensions play out in each type of language game, e.g., Is identity always underdeveloped in kiosk-type forums? Is it essential to have people performing moderating and facilitating activities in order for a community-style forum to evolve? It seems that to get past the kiosk model, one would need to have leadership of a certain type, either individual or shared. Future research should aim to define the types of actions this leadership consists of.*
- *The type of language game developed by a forum seems to be set quite early in the life of the forum. However, it may be the case that language games are on a continuum, and that a forum might start as a club and evolve into a community, or vice versa. If that were the case, it would be interesting to examine whether they could evolve in both directions, or if they can only become richer or simpler.*
- *We found that each forum developed a different language game. Our observations seem to suggest a difference of degree among these different language games. Yet, further empirical investigation will be needed to examine whether the differences among kiosks, clubs, and neighborhoods are a matter of degree or a matter of kind.*

Another important future direction is the study of language games as a function of professional domain. For example, studies could compare online forums discussing graphic design, medicine, and supply-chain management to surmise whether the same types of language games are enacted for each of these domains. Further research might allow us to define family resemblances among the language games developed by participants in online forums, and to define the language game of online forums.

- *The three types of language games are not functions of the professional domain. We can explore if, indeed, the same three types of forums develop in different contexts, such as medicine or supply-chain management. That could allow us to develop a taxonomy of language games in online settings.*

Language games contribute to the formation of shared mental models, and act as houses for group knowledge (Lyotard, 1984, 1985; Boland and Tenkasi, 1995; Koppl and Langlois, 2001). Our observations suggest that the three language games support different learning experiences. While DeSanctis et al. (2003) argue that communication technologies could afford different levels and types of support for learning networks, they also highlight the importance of social practices, roles, and interactions. Our study extends DeSanctis et al.'s work by providing a deeper analysis of these varied interactions, which in turn might lead to different types of learning experiences. More research is needed to better understand the relationship between the enactment of a specific language game and the development of a specific learning experience. Further study of the dynamics of online forums in terms of their resemblance and distinctions may prove helpful to understanding inter-organizational learning, and how different learning experiences can be nurtured in online settings.

- *Different language games create different contexts for knowledge-sharing and creation, and therefore support different learning experiences. For example, forums with well-established language games, such as KM Chapter, are conducive to the enactment of*

sense-making activities, while kiosks support mainly simple information-exchange activities.

Because multiple forms of language games (simple or complex) are possible, the concept of language games allows for comparative analysis across online forums. It is important for researchers to recognize that although online forums may share a family resemblance, each game is autonomous and has its own level of complexity and goals that do not presume its quality.

- *A language game need not be complex in order to function and thrive. So long as meaningful linguistic routines and related properties are enacted by a set of contributors through regular interactions and activities, the game survives — even as players come and go.*

In that sense, the simple game enacted by the participants in IT&KM Forum was “good enough” for the type of information participants were looking for; they might not have wanted to get involved in more complex relationship-management just for the sake of getting a reference or an answer to a simple technical question.

While we discovered a regional connection in two of the three forums, cultural differences related to linguistic customs of India and Australia were not incorporated into our analysis. Further research should include cultural factors of relevance to organizations and their discourse in order to enrich and refine the language-game analyses presented here.

- *In the context of online professional forums, members may feel more identified with the group if other members are from their geographic region, as common location might lower perceived differences in space and time. Therefore, future research might show that although forums are, in principle, open to participants from any geography, in most cases, the contributors appear to be from a dominant geographic locale. Moreover, one could examine whether the nature of the interactions is different in global forums compared to forums with a dominant geographic locale: e.g., Do forums with a dominant geographic connection tend to enact more often a club or a community language game?*

Researchers have studied how online communities can enhance social interactions within physical communities (Churchill et al., 2004; Sproull and Patterson, 2004), but there is little understanding of the reverse relationship — that is, how physical communities impact online communities. We examined an important process of embodiment within the language game of KM Chapter, as the players planned an inaugural workshop and held group meetings. Our observations confirm earlier predictions that few communities exist purely in an online form (Dutton, 1999; DeSanctis et al., 1999), and suggest the need to understand how hybrid forms of organizations function (Fiol and Connor, 2005; Griffith and Neale, 2001). Further study of the blending of digital and physical spaces, and how the embodiment of each affects mutual development, is needed. This is an entire area of research in and of itself.

- *Language games of online forums are not necessarily enacted only in an online context. We note that online interactions in some forums triggered face-to-face interactions. It would be interesting to examine the relationship between online and face-to-face interactions to understand how they influence and shape each other. For example, can we observe that in some forums, after a certain time, people suggest meeting? Inversely, is it always the case that online interactions are richer when people meet offline? Hence, can we observe that the participants in a community language game always complement their online interactions with offline interactions?*

5.2. Implications for design and management of online forums

We observed several important features of a forum's dynamics that appear to underlie its successful development. We offer the following tentative guidelines for the design and management of online forums. Some of these guidelines reinforce those suggested in prior studies (e.g., Mynatt et al., 1998; Preece, 2000; Wenger et al., 2002). Others provide new insight or enhance existing guidelines.

1. *Build the language game early on*

The context – the communicative practices and tone enacted in the forum – is crucial (see Powazek, 2001; Preece, 2000), and it is important to build it early on (Fayard and DeSanctis, 2005). All forums follow Gersick's punctuated equilibrium model (1991), and form their language games rather quickly. This is important to keep in mind while designing or managing online communities and to make sure that the language game is enacted early. Indeed, the language game constitutes the forum's context, as it provides a sort of behavioral script for participating in the forum, especially for newcomers who can replicate some of the practices. It provides a sense of continuity, coherence, and social identity in a setting where the majority of the contributors do not participate consistently.

2. *Role taking*

Enacting a language game early on is important, and roles can help in this process. First, the moderator or facilitator — who welcomes newcomers, stirs up the discussion, and sets the pattern for greetings and closings — is instrumental in starting the forum and building the stage for lively interactions. Second, a small core group of very active members who engage in a lively pattern of friendly discourse in the forum is also important to enact the language game and maintain it, even if the moderator/facilitator is not involved for a while. Last, different types of leadership — individual or shared — seem to influence the development and the style of the language game enacted by the forums.

3. *Support embodiment*

Our case studies of KM Forum and KM Chapter highlight the role of locale as a source of social-identity discourse over time. In both cases, the forum became a facilitator for face-to-face interactions, and technology bootstrapped the socialization process. This suggests that there may be some benefit to creating a physical structure to ground the online community and support interactions. For example, O'Mahony and Ferrara (2007) show the importance of face-to-face meetings in defining membership in an open-source community. Similarly, Wenger et al. (2002) have highlighted the importance of embodiment for distributed communities of practice inside organizations (e.g., arranging teleconferences, face-to-face meetings, etc.). Our results suggest that Wenger et al.'s advice may apply to online professional forums that form outside of corporate boundaries.

4. *"Think globally, act locally"*

While online forums are regarded as venues for interacting boundaries of time and space (Ahuja and Carley, 1999; Butler, 2001; Gray and Tatar, 2004; Sproull and Faraj, 1995), as noted above, our observations also imply the importance of the geography. This suggests that managers need to pay attention to local specificities such as geography and culture. As proposed by Lave and Wenger (1991) and Boland and Tenkasi (1995), knowledge is created by individuals interacting and participating in the practices within local communities. Hence, one might think of ways to support the development of interconnected forums, instead of a unique global forum.

6. Conclusion

Whereas prior researchers have documented the language games of face-to-face organizations, relying largely on static texts (especially published works), and in rare cases, samples of face-to-face encounters, our analysis extends the language game approach to the electronic environment, where discourse is dynamic, fully documented, and occurs over long time periods. We have shown how language game analysis can be systematic and structured, and have provided an analytic approach that can be used as a starting point for further inquiry into the different types of forums on the electronic landscape, and the process by which they organize. The language game framework also provides a useful and relevant lens for researchers interested in taking a developmental approach toward the study of online discussion forums. We hope our exploratory study leads to further inquiry into the language games of online forums and their developmental processes.

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APPENDIX 1

Questions Guide for analyzing the discourse of the forums

Linguistic style —

- *Greetings and signatures* — How do contributors address the other participants (e.g., “Hi, Meg” or “Dear Sir”)? Do participants sign their messages or use signature files? What kind of signatures are they using? (E.g., none, “Joe” or “J. F.”)
- *Message structure* — How long are the messages? What is the tone of speech? Are messages matter-of-fact, or do they include forms of politeness, expression of positive regard toward others? Do messages include reference to prior messages, forwarding, or excerpting of earlier message content?
- *Paralinguistic features* — How formal or informal are the messages? To what extent do contributors use punctuation, emoticons, capital letters, parentheses, etc.?
- *Feedback* — Do contributors express agreement or disagreement, or seek others’ agreement or disagreement with a viewpoint or prior message? Do they express appreciation or acknowledgement (e.g., “Thank you,” “cheers,” “looking forward to...”)?

Roles — What roles are discussed and how are they discussed? Who enact the roles? Are there references to task responsibilities or organizational structure (relative importance of roles)?

- *Founder* – The person who starts the forum by posting the initial message. Who is the founder? Does the founder state the forum’s purpose or goal? What is his or her claimed role, if any? What actions does the founder take as the forum’s life unfolds? (E.g., How active is the founder? How do other contributors to the forum react to the founder?)
- *Moderator* – The administrator of the forum who regulates the technology or its use by contributors. Does anyone claim to moderate the discussion or informally appear to do so? What actions does the moderator take, and how do others react to these moves?
- *Facilitator* – A person who directs discussion content. Does anyone encourage or discourage discussion topics or methods of posting messages, give constructive feedback, or summarize the key learnings from a discussion? Is there only one facilitator, or several? How do contributors react to the facilitator(s)?
- *Guru* – Does the discussion include or refer to KM experts or other luminaries or prominent writers/spokespersons (Jackson, 2001)? How do they influence thought or action in the forum?
- *Core Group* — A set of contributors who return repeatedly over time; their communication ties are stronger (more frequent) than other contributors who operate on the periphery of the forum discussion (Smith, 1999). Is there a core group? How do they behave, and how do others react to their contributions?

Legitimacy and authority:

- *Introductions* – How do new participants introduce themselves? What disclosure(s) do they provide about themselves or their background?
- *Reference to KM experience* — Do participants refer to relevant KM work or research experience, membership in KM societies or other KM forums? (legitimacy) Do they refer to prestigious people or institutions? Do they refer to their successes or accomplishments? (authority)
- *Reference to OLF history* — Do participants refer to prior messages, to lurking, or state how long they have been involved in the forum? Do they make reference to a specific line of discussion in the group?

Collective identity

- *Collective language* – Are participants using “we” or “us” to refer to participants, rather than “you” or “I”? Do they use the forum name, or refer to the group (“Hi, all!” “Dear friends,” “our group”)? To what kind of identity does the collective language refer:
 - *Forum identity* – reference to the immediate forum or its contributors
 - *KM community* – reference to the larger professional collective who share the same interest
 - *Geographic identity* – reference to a common region, country, or other geographic locale that is shared by forum contributors.
- *Embodiment* – Do participants refer to face-to-face meetings, conferences, the workplace, or other physical places where contributors might interact offline?

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