

**Genre Systems:  
Structuring Interaction  
through Communicative Norms**

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# Genre Systems: Structuring Interaction through Communicative Norms

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## **Abstract**

In this paper, we demonstrate that teams may use genre systems -- sequences of interrelated communicative actions -- strategically or habitually to structure their collaboration. Using data from three teams' use of a collaborative electronic technology, Team Room, over an eight month period, we illustrate that genre systems are a means of structuring six aspects of communicative interaction: purpose (why), content (what), form (how), participants (who/m), time (when), and place (where). We suggest that CSCW researchers, designers, implementors, and users may benefit from an explicit recognition of the role genre systems can play in collaboration.

## **INTRODUCTION**

Over the years, much research in the area of groupware and cooperative work has concentrated on developing and studying technological and social means of facilitating cooperative work [e.g., Bikson and Eveland, 1996; Bullen and Bennett, 1990; Button, 1993; Grudin, 1988; Mark, Haake, and Streitz, 1997; Markus and Connolly, 1990; Olson, Olson, Storrosten, and Carter, 1993; Orlikowski, 1992; Rogers, 1994; Roseman and Greenberg, 1996; Suchman, 1994; Winograd, 1994]. In this paper, we build on that tradition by proposing that genre systems -- sequences of interrelated communicative actions -- are a means of structuring collaborative work, and then illustrate this claim empirically by drawing on data from a field study of teams using Team Room™, a collaborative technology produced by Lotus Development Corporation. Genre systems are important ways of organizing the social, structural, temporal, and spatial dimensions of interaction generally, and we believe that they can be particularly powerful in structuring electronic interactions, where these dimensions of collaborative work have all shifted. We conclude by discussing some research implications of the genre system lens, and suggesting that groups seeking to collaborate electronically may find genre systems especially useful -- both tacitly as habitual mechanisms and explicitly as strategic devices -- in facilitating their cooperative work.

## **GENRES AND GENRE SYSTEMS**

While the concept of genre has a long tradition in rhetorical and literary analysis [Bakhtin, 1986], a number of researchers in cultural, rhetorical, and design studies have recently begun using it to refer to typified social action [Bazerman, 1988; Berkendotter and Huckin, 1995; Brown and Duguid, 1991; Miller, 1984; Reder and Schwab, 1988]. Orlikowski and Yates [1994] have applied this notion of genres to organizational communications (e.g., memos, meetings, reports, training seminars, resumes, and announcements), and examined these as socially recognized types of communicative actions habitually enacted by organizational members to realize particular communicative and collaborative purposes. They

identify genres by their socially recognized purpose and by their common characteristics of form. The purpose of a genre is not an individual's private motive for communicating, but a purpose socially constructed and recognized by the relevant organizational community and invoked in typical situations (e.g., proposing a project, meeting to review project status). Form refers to observable aspects of the communication, such as medium (e.g., pen and paper, telephone, or face to face), structural features (e.g., text formatting devices such as lists and structured fields), and linguistic features (including level of formality, specialized vocabulary, or graphic devices).

A genre established within a particular community serves as an institutionalized template for social interaction -- an organizing structure -- that influences the ongoing communicative action of members through their use of it within and across their community. Genres as organizing structures shape, but do not determine, how community members engage in everyday social interaction. In many instances, individuals draw on existing genre norms out of habit, to facilitate a particular communicative act (e.g., tacitly using a standard memo format for interdepartmental communication or routinely using the classroom lecture genre in preparing a class). In other instances, individuals may draw on genre norms strategically to accomplish a communication action (e.g., deliberately choosing a letter template in composing an electronic mail message addressed to an external party or explicitly shifting the medium for a meeting from face to face to audio conferencing to accommodate remote participants). Whether used strategically or habitually, genres are a powerful source of communicative norms for social activity [Yates et al., in press].

Occasionally, genres are linked or networked together in a way that constitutes a more coordinated communicative process; for example, committee meetings often include a series of genres such as oral presentations, dialogue, and voting, while journal articles are often realized through an interlinked sequence of genres including a submitted manuscript, peer reviews, and an editorial decision letter (which may end the sequence or, if it invites the author to revise and resubmit the manuscript, may

begin another sequence). Such a *genre system* consists of interdependent genres that are enacted in some typical sequence (or limited set of acceptable sequences) in relation to each other, and whose purpose and form typically interlock [Bazerman, 1994]. For example, the set of precisely defined speeches and rebuttals in an intercollegiate debate form a carefully orchestrated genre system. Similarly, the job ad, job letter and resume, and rejection letter (or invitation to interview, interview, and job offer) form a genre system constituting a hiring process. Such systems are composed of a coordinated, interconnected set of communicative actions that together accomplish an interaction (such as hiring personnel). From an organizational standpoint, much collaborative activity is organized and defined by such genre systems, so that by examining these genre systems in practice, we can learn much about collaboration in general, and distributed, computer-supported collaboration, in particular.

This notion of a genre system as a series of genres comprising a social activity and enacted by all the parties involved, is especially useful for studying interaction because it focuses on how people use sequences of communicative actions to coordinate their activity over time and space. Like individual genres, genre systems too are organizing structures within a community, providing expectations about the purpose, content, form, participants, time, and place of communicative interaction-- in other words, the *why*, *what*, *how*, *who/m*, *when*, and *where*. In discussing these aspects of communicative interaction, we will treat them separately for analytic convenience; in practice, they are closely interconnected.

- *Why*: Most obviously, the genre system provides expectations about its socially recognized purpose and those of the genres that compose it. For example, the genre system of conference paper reviewing is intended to select papers for presentation at a conference and, in many cases, publication in the proceedings. As the genre system becomes contextualized for particular conferences by the conference chairs and program committee, it may have one or more added purposes, such as serving a gatekeeping function for the kind, quality, and topics of work selected to

represent a given field or interest area; or providing feedback to improve the quality of published papers.

- *What:* The genre system provides expectations about the content of the whole genre system, as well as the sequence and content of its constituent genres. The conference paper reviewing genre system, for example, provides expectations about which genres typically appear and in what possible sequence(s) -- for example, submitted manuscripts, reviews provided by program committee members, and decision notification letters sent by the program chairs. These individual genres also carry expectations about their content -- for example, the decision letter informs author(s) of whether a paper has been accepted.
- *How:* A genre system provides expectations about the form of the genre system, including expectations about media, structuring devices, and linguistic elements. For example, the manuscripts submitted to the conference often have to appear in a very particular format (including, for example, length, type and size of font, page and margin sizes, and media of preparation and submission) specified in the call for papers or guidelines associated with the conference.
- *Who/m:* A genre system provides expectations about the participants involved in a communicative interaction. It specifies who typically initiates which genres, and to whom such genres are typically addressed. For example, reviews prepared for papers submitted to a conference are intended for the program committee and, ultimately, the authors.
- *When:* Participants in a genre system often attach specific temporal expectations, typically stated as deadlines, to different constituent genres. For example, conference papers have to be submitted by a particular date in order to be considered, and program committee members are requested to complete their reviews within a specified time period (though this time period is sometimes open for negotiation).

- *Where*: Finally, a genre system provides location and place expectations for the entire genre system and its specific genres. For example, conference calls for papers typically indicate where manuscripts should be submitted, either an address for physical mail or a cyberspace address for electronic submissions.

To summarize, a genre system, when enacted by participants, structures or choreographs multi-party interactions within and across communities. It serves as an interaction template which participants draw on in engaging with each other across media, time, and space.

## **GENRE SYSTEMS IN TEAM ROOM**

In the next section we will use data from the early use of Team Room by three teams in a high-technology company in the northeastern US (“Mox Corporation”) to illustrate how genre systems structure interaction. Here, we briefly summarize the context and nature of the data we draw on. The data and analytic methods are described in more detail elsewhere [Yates et al., 1997].

The Team Room™ technology is a collaborative application built within Lotus Notes™ and designed specifically to support teams in organizational settings [Cole and Johnson, 1995]. The three teams we studied included the IS Quality Improvement (ISQI) team, the IS Leadership team, and the Philanthropy team. The first two of these teams were part of the Information Systems Department within Mox Corporation and consisted of technically adept members familiar with various forms of electronic communication, including Lotus Notes. The third team consisted of corporate staff with limited technological experience.

The ISQI team, which was composed of three core members plus a larger set of interested parties, used its Team Room the most extensively, with a total of 238 messages posted in the eight-month period studied. This team saw its purpose as being to “[o]versee and drive the implementation of

TQM in Mox I.S.” The team leader initiated the use of Team Room at the time the team was formed, seeing the groupware technology as

... a way of creating a running documentation for the quality improvement project that would also support interdependent work and inclusion of those outside the immediate work circle.

The IS Leadership team, which included twelve members, each of whom had his or her own subordinates and responsibilities and several of whom worked remotely at least part of the time, defined this team’s role as follows:

To improve the productivity of Mox by connecting the desktop to corporate data, seeking opportunities to reengineer business processes using technology, and enhancing Mox’s ability to perform its business.

The team leader believed Team Room would facilitate communication among the members by creating one main channel for communication and simultaneously produce an archive for several long-term projects. This team’s use of Team Room generated 188 messages over the period studied.

Finally, the Philanthropy team, composed of five members spanning three levels of hierarchy, described its mission as follows:

To facilitate the sharing of a portion of the company’s profits, products, and people in ways that assist individuals and communities, particularly those racially and economically disadvantaged, in achieving their highest potential in terms of social and economic development.

Although the team existed before Team Room was made available, its members tended to work independently rather than collaboratively. The team leader supported the use of Team Room specifically in order to promote collaboration among the members. Plagued by early technical difficulties as well as by interpersonal tensions, the Philanthropy team generated only 66 postings in the period studied.

Based on our analysis of the data (derived from coding and analysis of 492 messages as well as interviews with participants), we identified three genre systems in use by all three teams: the meeting



genre system, the collaborative repository genre system, and the collaborative authoring genre system. Almost half of the messages could be categorized into one of these genre systems. We consider this percentage quite high, as we would not expect all or even most such group communication to take the form of these highly choreographed interactions. Rather, we would expect a considerable amount of communication in the tool to be less structured.

The *meeting genre system* involved the communicative activity around and including face-to-face meetings, including in its fullest form the following genres: meeting logistics, meeting agenda, the meeting itself, and meeting minutes distributed subsequently. The meeting logistics and meeting agenda genres often overlapped, with a single posting containing both, as in the following example:

REMINDER: TQM MEETING - Thurs Sept 26 from 10 to 11 in Conference Room C

The agenda for Thursday's meeting is:

1. ...
2. ...

The meeting itself was enacted face to face, and in cases where an agenda was not circulated in advance, it was often presented at the beginning of the meeting. Finally, some meetings were documented in minutes. This genre system is clearly rooted in norms established originally in the paper-based world and subsequently transferred into electronic media.

The *collaborative repository genre system* involved using one document as a placeholder which invited subsequent contributions on the stated topic in the form of responses (or "comments," as they are designated in Notes and in Team Room) nested within the placeholder document. The teams we studied used this genre system to support diverse activities such as coordinating schedules, brainstorming, initiating discussions, and consolidating topical information. Below is a simple placeholder used for compiling vacation information in the IS Leadership team:

[Subject:] Please enter Vacation Plans for July and August

Responses to this placeholder took an equally simple form:

Joe out July 3 thru July 7

Other placeholders were more complex, asking for thoughts and accumulated information, as in the following posting by a member of the same team:

[Subject:] Operations Outsourcing

There is enough uncertainty in the information flow on finding a partner for us, that I think it would be worth while to open a document that address[es] the current status of this project. I would not expect to see the detail in this database, but I think we should use it for communicating decisions, issues, and current status of investigations. ... Everyone should enter issues to think about....

The responses to this placeholder included both information on the status of the search as well as a variety of thoughts about the type of partner that would be appropriate. This genre system makes use of the structure provided by Team Room (in turn based on that of Lotus Notes) in an innovative way to support activities that might previously have happened less systematically in various ways.

Finally, the *collaborative authoring genre system*, which centered around the cooperative act of authoring texts, included three genres: a circulated draft, responses to this draft, and a final version. The circulated draft was often accompanied by an explicit request for comments, as in the following example:

Here is a first shot at a course outline. ... Please comment on what might be missing or over emphasized.

Alternatively, the invitation to comment was implied rather than stated, as in the following subject line to a circulated draft:

[Subject:] Here's the start of communication strategy (work in progress).

The responses to the draft came in two variations -- which we refer to as feedback on and dialogue around the draft -- though the distinction is not always a precise one. In the feedback-on-draft variant,

the response focused on the text of the draft itself, making editorial suggestions. For example, in a circulated draft of a customer questionnaire, one of the questions posed read as follows:

2. How well do our applications (or the development process) meet your needs?

One team member provided specific feedback on the wording of this question as follows:

2. How well do our applications ~~(or the development process)~~ meet your needs?

Have you ever been involved with Applications Group in the development of an application? (If so,) how well did that process work for you?

In the dialogue-around-draft variant, the discussion focused on the content of the draft, including debates about policy and implementation. For example, in response to a circulated draft proposing weekly TQM lunch sessions, two members of the ISQI team offered the following comments:

I would suggest making it “brown-bag” rather than lunch is provided, just for the ease and expense of it....

This sounds a good idea. I would expect participation to start strong but to scale back from weekly to periodic interest after a while.

The third genre in the system, the final version, was rarely posted in the Team Rooms; according to interviews, such final versions were more often produced in another medium such as presentation graphics. This genre system resembles that conducted in paper media or via e-mail, but broadens the involvement and interaction to all team members, allowing for team (rather than one-to-one) dialogue around issues.

## **GENRE SYSTEMS AS STRUCTURING INTERACTION IN TEAM ROOM**

In this section, we will draw examples from the three genre systems used in the Mox Team Rooms to show how they embody expectations that structure several aspects of communicative interaction: why, what, how, who/m, when, and where. In some cases, we will see explicit awareness of

the expectations and their coordinating role, while in others the teams appear to enact the coordinating genre systems more or less habitually.

## **Why**

Most centrally, a genre system provides expectations about the socially recognized purpose of the system as a whole and of the genres that compose it. For example, the meeting genre system has as its central purpose the coordination of a meeting among a specified set of people to achieve some purpose. In some cases in the Team Room data a team member called the meeting for a specific purpose (e.g., meetings by the ISQI team to organize specific TQM events or projects), and used the genre system to focus attention and coordinate action around that specific purpose. In such cases, for example, the meeting organizer circulated a draft of the logistics and agenda to get input that would make the purpose of the meeting as explicit and attractive as possible to potential attendees. In other cases, the meetings were simply semi-regularly scheduled staff meetings (e.g., the ISQI team's weekly or bi-weekly meetings), and team members invoked the genre system unreflectively to coordinate attendance. The genres within that genre system carry purpose expectations as well. The meeting logistics message coordinated the appearance of the desired set of individuals at the meeting and the agenda (sometimes part of the same posting) stated, more or less explicitly, expectations about the content and desired general outcome of the meeting. The meeting served as the locus for face-to-face discussion of the meeting's topic. Finally meeting minutes, when present, served to document the decisions and commitments team members made at the meeting.

As another illustration, the socially recognized purpose of the collaborative authoring genre system was to solicit and incorporate suggestions into a document considered important to the team and needing buy-in from other team members. The circulate draft genre presented the draft to others and

requested group input. The response to draft genre had the purpose of providing the requested input, either to the document itself (in the feedback on document variant) or to the philosophy and policy evident in the document (in the dialogue around document variant). The final version, when it appeared, showed the group what the final document looked like and how group members' suggestions had been incorporated into it.

As a final example, the collaborative repository genre system had the general purpose of designating a specific (virtual) place for electronic input about a specific issue. It allowed brainstorming and coordination without a face-to-face meeting. For example, the IS Leadership team, consisting of members with separate areas of responsibility and busy schedules, used this genre system frequently to get the input needed from its members to make scheduling, policy, and strategy decisions. They probably initially used this innovative genre system strategically to help coordinate their input without a meeting, though such use may have become habitual over time.

## **What**

A genre system provides expectations about the content of and sequence within the genre system. For example, the collaborative authoring genre system is typically composed of the following sequence of genres: a circulated draft, some responses (feedback on and dialogue around draft), and, in its most complete form, a final version. The final version of a document appeared in the Team Rooms in only four cases, but interview data revealed that final versions frequently appeared in other media.

In terms of the content of this genre system, what we came to call "orphaned drafts" were particularly interesting. Twenty two of the 41 circulated drafts posted in the three Team Room databases received no responses, that is, no team members took up the request for input.<sup>1</sup> Although

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<sup>1</sup> This is related to what Freedman [1994] terms "uptake," how genres do or do not respond to each other.

these “orphaned drafts” could be interpreted simply as free-standing genres (drafts posted for the information but not action of others), the request for input made clear that they were intended as elements in a genre system. Interviews shed some light on how team members viewed these drafts. For example, one member of the ISQI team explained that

Some of these incomplete documents stem from projects that were put on the back burner.

This member expected such drafts to be taken up later. In contrast, another member of this team had a somewhat different interpretation of such incomplete genre systems:

I think we're an organization of people who basically have attention deficit disorder. If it's not on everyone's frontal lobes at the time, then it's gone. There's no back burner, there's no, "Hmm, that's interesting, we're going to come back to that at some point." If it's not on fire, it doesn't exist.

Yet another interpretation came from a member of the Philanthropy team, who suggested that team members sometimes posted drafts that had already been discussed face to face, and the absence of any response was taken as agreement that the write-up “represents what had been decided.”

A similar issue of incomplete genre systems arises when we examine the content of the collaborative repository genre system. This genre system typically consists of a placeholder document and responses to it. In 5 out of 21 cases, however, no responses appeared to a posted placeholder. Again, interpretations of this phenomenon varied. One member of the IS Leadership team in describing habitual participation in this genre system, viewed responding to placeholders as optional:

I think there's an unstated norm in these placeholders or brainstorming that not everyone needs to comment on it. You only comment on something if you have an opinion. Whereas if there's an action for you, there's a norm that you need to respond to it. But if it's a placeholder ... if you see something in there and you agree or you don't care, people don't comment on stuff like that.

Despite this belief in optional responses, however, the same member also revealed that such behavior had personal consequences:

The way that I feel if I put something in and no one comments on it, it's exactly like saying something in a meeting and having no response around the table. You just feel like--unless you really want to push it--say it again, say it louder, say it to somebody in particular--you just sort of say, "Well, never mind." I would always get a little perturbed by that. I don't know how other people felt. Anytime I put a document in and no one comments on it, I think it's really rude I guess. ... It's like saying something out loud and having it go off into the ether. It's a disempowering thing, to be ignored. It's being ignored, basically.

This member's expectations around what genres make up this genre system (a placeholder and some responses) contributed to his negative interpretation of the lack of responses to posted placeholders. That is, he interpreted as strategic, behavior he had earlier described as habitual.

The "what" of a genre system also provides expectations for the sequence(s) in which the constituent genres may appropriately appear. For example, meeting minutes that appear before a meeting occurred would not be considered a legitimate part of the genre system, just as it would not have made sense to have the meeting logistics genre appear after the meeting itself. Similarly, comments that preceded a draft would not be seen as part of the collaborative authoring system we have described, though they might be part of brainstorming in an instantiation of the collaborative repository genre system.

Within the genres constituting the genre system, the "what" or content refers to the subject areas typically covered in the genres. For example, meeting logistics messages were expected to contain information about the time and place of the meeting, agenda messages announced topics to be covered in the meeting, and minutes, when present, summarized decisions and commitments.

## How

A genre system also provides expectations about the typical form (including media) of the genre system and its constituent genres. During a given time period, a genre system may carry norms about the media acceptable for various constituent genres, though such norms clearly change over time and may be in flux at a particular period in time. For these collocated groups, for example, the meeting genre within the meeting genre system was expected to be face to face. For geographically dispersed groups, however, we can imagine such “meetings” taking place via audio or video conferencing, or even by synchronous or asynchronous text-based conferencing. The shift from face to face communication to another medium would be a significant one that would probably involve some shifts in the other genre norms of the meeting.

The newly introduced Team Room medium was a salient aspect of the “how” expectations of the Mox teams. In the collaborative authoring genre system, the introduction of the Team Room medium had led to a shift from circulating a draft to selected people (on paper or as an e-mail attached file) to posting it in the Team Room where all other team members could see it. Significantly, this also meant that every member of the team saw every other member’s comments, rather than having only the primary author see all of the comments. The interviews indicated that this shift in medium supported more involvement by the team as a whole.

The collaborative repository genre system was based on the structure underlying Team Room and Lotus Notes--the document followed by responses. While some instances of it probably replaced face-to-face meetings, others replaced an e-mail or paper query that would have been responded to by each person individually. As realized in Team Room, the genre system supported easy asynchronous contributions and increased involvement of the whole team. Thus we can see that genre systems could change when the medium in which they were realized changed; the medium might even encourage the



emergence of new genre systems, as the underlying document-response structure of Notes and Team Room seems to have done for the collaborative repository genre system.

Genre systems also structure “how” teams coordinate by carrying expectations about the form of the constituent genres. These expectations are not as constitutive of the individual genres as are the “why” and “what” expectations, nor are they as critical to coordination, but they are significant socially recognized norms that can be adopted habitually or strategically as a way of facilitating coordination. For example, in the three Team Rooms, 13 out of 17 meeting agenda messages had lists as a form feature, and 12 out of 17 meeting minutes had subheadings. These form features could be used by authors of agendas and minutes both as easy, habitual forms for presenting the content and/or as ways of strategically drawing attention to important points. For example, minutes for one meeting of the Philanthropy team had both topical summaries preceded by subheadings and a section dedicated to “Next Steps” that identified the tasks assigned to various individuals by using their names as subheadings. The use of names as subheadings strategically highlighted what each person had agreed to do.

The placeholder genre in the collaborative repository genre system always took the form of a document, while the response genre took the form of a comment to a placeholder document. In this case, the form, enabled by the underlying document-response structure of the tool, played a central role in coordination around a specific issue. In the collaborative authoring genre system, 20 out of the 41 circulated drafts were drafted in another application (e.g., word processing or spreadsheet), then imported into, linked with, or attached to a message within the Team Room. Here, the tool supported such form characteristics as the attached, linked, or embedded file, allowing drafts created in other media to be put into Team Room where responses could be seen by all, thus facilitating coordination. The expectations for the form of constituent genres were not as strong as those for purpose and content, but the form expectations were part of the constellation of expectations associated with the system and the genres making it up, and in many cases facilitating coordination.

## Who/m

A genre system may carry expectations about roles in communicative interactions that help coordinate collaborative action. In a given genre system, the relevant community may identify who can initiate which genres, and for whom such genres are intended. In the Mox teams' use of the genre systems, the roles are not as clear cut as in some other familiar genre systems such as the conference reviewing example referred to above. Interviews with ISQI team members suggested that the three team members, though representing two hierarchical levels, were not very hierarchical in their work styles. Thus different individuals might draft and post documents on different subject areas. Nevertheless, the official team leader of ISQI saw his role as setting direction and encouraging the collaboration of the others in developing that direction. Thus certain types of documents were typically drafted by him. In the Philanthropy Team, interviews revealed more issues around ownership of projects and initiation of drafts in Team Room, although these were linked more to interpersonal conflicts than to hierarchy. One person explained,

There was also a thing about establishing a presence with the project. It seems silly, but the person who creates the document, if there is conflict in the group, that becomes something people pay attention to. I started paying attention to who created a document and what that meant. Does that mean that that person is then in charge of the project, and those kinds of things. At the end, does it look like that person is all over the Team Room, like that person is doing more?

Thus the issue of who initiated certain genre systems had more significance in this group where interpersonal tensions were more evident and where the group worked less as a team than the ISQI team did.

The genre systems we observed in the use of Team Room carried clearer expectations around "for whom" they were intended than around "who" initiated them. As noted in the discussion of "how" above, the Team Room medium supported a change from tasks handled in media such as e-mail by

making most team messages available to all team members (of course, an individual could still send a personal message by e-mail). This allowed more inclusive coordination. For example, one Philanthropy team member stated in an interview:

I think it's good that everyone has access to [Team Room]. I think it can bring the level of discussion to a different, deeper [level].

The same person noted in another interview that in Team Room, she could post a draft to everyone at the same time, rather than first clearing it with her boss:

[Team Room] made it possible for me to post something to the group. Without it, I would probably have gone to [the team leader] with the idea, and then discussed it with him, seen what he had to say, then presented it at a staff meeting. But it would have gone through him first. This way sort of bypassed him.

In general, these genre systems as they were used in Team Room, whether strategically or habitually, increased participation of the whole team and provided a mechanism for coordinating that participation. In cases where the team was less strong and there were tensions and rivalries, initiation of a genre system involved more explicit strategy (e.g., taking ownership of a project or idea by drafting a document on it).

## **When**

Genre systems also structure temporal aspects of coordination. Initiators of communication, in this case of genre systems or of genres constituting them, may tacitly accept timing assumptions already attached to the genre system, or may explicitly use them or even shape them as strategic devices of coordination. In either case the genre system may be seen as structuring temporal aspects of coordination in the teams. The ISQI team often used the meeting genre system, for example, around its regular team meetings (initially every week, but later, as the project task shifted, once every two to three weeks). The genre system created expectations for sequence and timing of the constituent genres. The meeting

organizer's announcement of the day, place, time, and general purpose of the meeting typically initiated the genre system. The active shaping of time is evidenced by the team's shift in meeting schedules from weekly to bi-weekly and to even less frequently over time.

The genre systems also structured time in the sense of the opportune time [32] for some communicative action. We have noted that minutes were not typically used for such regular staff meetings. Nevertheless, minutes for some of the ISQI group's regular meetings as well as special meetings were posted in the Team Room. A team member explained in an interview when minutes might be posted:

Either it had been a very productive meeting and we thought that we needed to capture what we had gleaned from the meeting, or ... we needed to share some agreements we'd made with other people.

Thus minutes, the last and optional genre of the complete genre system, resulted when a member recognized and/or shaped an appropriate moment to produce minutes.

Although the use of timing just cited was explicit and strategic, we see cases in which the team members accepted certain expectations about timing more tacitly. In the collaborative authoring genre system, we have noted that some drafts were orphaned--that is, no one commented on them to complete the genre system. In most cases in which any reactions to a particular draft were posted, the first reaction came about a week after the draft's posting. This week appears to reflect a tacit "window of opportunity" [28] for responses. After that period, responses were less likely to appear, as the appropriate moment had passed. We saw evidence, however, that the team member who posted the draft had the ability to shape the opportune moment, as well. One team member commented on the orphaned drafts as follows:

It's how things work at Mox. ... [I]n this kind of environment ... people just sort of float an idea out there and see if it takes off. If no one responds to it, then you have to decide, 'Is this something I care about enough to push through the organization or would I rather put my energy elsewhere?'

Although this explanation accounts for the fact that many of the orphaned drafts were simply dropped, it also allows the initiator who "care[s] enough [about something in the draft] to push [it forward] through the organization." In doing so, he or she would reshape and extend the window of opportunity, rather than accepting the time expectations carried by the genre system.

### **Where**

Finally, a genre system structures location and place expectations for the entire genre system as well as specific constituent genres. While each instantiation of a genre system is situated, the genre system and its constituent genres carry more generalized cultural expectations about place. For example, a member of the ISQI group explained that another member, initially reluctant to use Team Room rather than e-mail for much of the team's communication, had changed his view by the end of the most active period of use,

... he got why we were doing this because it was so valuable to go back in and have one place where that stuff was held.

Similarly, another member of ISQI noted that

We've used Team Room as the place to make, put words on all the individual thoughts we've been having. And to put them out there for comment from other people. So, it's been a place where I'll start forming an idea, and put it out in whatever ill-formed shape I have as a discussion document, and I'll request as part of that, that [my colleagues] talk about it.

So when individual team members enacted innovative genre systems such as the collaborative repository genre system in Team Room rather than in e-mail, the team as a whole gained a clearer sense of place for its activities. This structuring of team place was perceived as an advantage by users, coordinating their activities through collocation in an electronic space. While these teams were primarily

physically collocated, the advantage of using the electronic space to constitute a team place grew when a dispersed member was added. A member of the ISQI team noted that usage of Team Room

... has picked up lately because we have a new quality office member in Europe and she is--that's pretty much the only way we can communicate with her except for via e-mail--and she's putting a lot of stuff in there. So that's sort of encouraging us to do that.

But the tool by itself was not enough to create a sense of place -- team members had to use it in ways that structured their electronic space to produce what might be called a "team place," as the members did when they used genre systems such as the collaborative repository.<sup>2</sup> The same ISQI member talked of another Team Room with distributed members that was never used successfully because people simply did not respond to drafts or placeholders posted in it -- that is, they did not use the electronic space to construct a shared place for their team activities.

## **IMPLICATIONS OF GENRE SYSTEMS FOR RESEARCH, DESIGN, AND USE**

As this paper has shown, genre systems play an important role in structuring expectations around several aspects of communicative interaction: *why*, *what*, *how*, *who/m*, *when*, and *where*. In some cases these expectations were invoked and even shaped deliberately and strategically, while in other cases they served as habitual structuring mechanisms. These expectations in turn play an important role in collaborative team activity. In this section we will discuss the implications of this analysis for three domains: research, design, and use.

### **Research**

Approaching collaborative work through the lens of genre systems allows the researcher to focus on communicative norms in practice. This lens is particularly useful when attempting to understand

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<sup>2</sup>This perspective is consistent with Harrison and Dourish's [1996] distinction between space as three-dimensional location and place as socially constructed locale.

collaborative work mediated through groupware technologies because it keeps the research focus primarily on the social practices as they interact with technology, highlighting expectations of typified communicative interaction. It also allows the researcher to examine the conditions under which individuals draw on norms and expectations simply out of habit and the conditions under which they do so with strategic intent (e.g., whether to document meetings in minutes or respond to a placeholder). In addition, it allows the researcher to identify variations from genre system norms, whether deliberate or inadvertent, that result in innovative or incomplete genre systems. As noted above, the collaborative repository genre system was a useful innovation on established procedures such as brainstorming and archiving, while orphaned drafts and the frequent absence of minutes revealed incomplete genre systems. By identifying these variations to genre systems, the lens allows further investigation of their consequences, both anticipated and unanticipated as well as positive and negative.

### **Design**

As we have seen above, the norms surrounding some genre systems were ambiguous and could lead to aborted or difficult collaborative activity. Designers of collaborative technologies might aid users in reducing ambiguity by making explicit the interdependence of a sequence of related genres in a genre system and supporting such linkage through technological means. Both Lotus Notes and Team Room provide a template for one such interdependent relationship through the document-comment structure, and we have seen the teams put it to effective use. Designers might consider adding more such general structures as well as providing tools to support users in building context- and domain-specific structures relevant to their collaborative activities, both existing and emergent.

### **Use**

As we have seen in the activities of the three Mox teams, effective collaboration involves more than good tools. In particular, we have seen some negative consequences of inconsistent and ambiguous

expectations around genre systems. For example, at least one member experienced the lack of responses to posted placeholders as a personal rejection that may have resulted in feelings of alienation from the team. Thus shared norms for collaborative team activities seem critical. Indeed, one team member reflected specifically on this point:

The places where I've seen Team Room be more successful than not are when teams have actually had discussions about how to use Team Room. It's not one of these things that can be thrown up and "Let's give it a try." ... I think it's more about how people--it's not about the documents, and it's not about how we tend to use them and not close loops and stuff--but it's about having those initial discussions, and coming back to them would probably be important, too. To say, "This is a tool we're choosing to use for our team for this purpose, and this is what we expect from each other."

As this quote suggests, teams may benefit from explicit and ongoing attention to developing and maintaining shared norms [Grudin, 1994; Okamura et al, 1994; Suchman, 1996; Trigg and Bødker, 1994]. Although Team Room supports such attention through its Mission Page and designation of Team Room facilitator [Cole and Johnson, 1995], users will not benefit from this support unless they recognize the value of such shared norms and allocate resources and attention to this process. Whether users of collaborative technology like it or not, their interaction is shaped by communicative norms such as the genre systems we have discussed above. We believe they might benefit from articulating and sharing these norms.

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