The most common consequence of setting up an "electronic discussion group" for a university class or a group of faculty is a flurry of initial greetings followed by an enduring silence. Only a small proportion of computer users are active and sophisticated enough to read regularly and feel disposed to participate actively. Written discussion may itself be a contradiction in terms. Also, producing coherent discourse seems to require looking back at text that has already been produced. For a writer, part of the generative power of written text is to be always looking at the same ideas, in their particular situation, in a new way. Electronic discussion programs make it difficult for participants to build on the past, directing participants' attention relentlessly forward. There are at least three broad categories of discussion programs: "bulletin board" types, "newsreaders," and e-mail-based discussion lists. There are differences among these types, but in all three cases, when the messages are read is up to the reader. A program called HyperNews, under development at the University of Illinois, offers users a different, more immediately visual way of presenting the list of read and unread postings, based on the cross-platform flexibility and graphic capabilities of the World Wide Web and Web-browsing programs. Such programs make possible a number of activities that older programs for conducting, constructing, and recording text-based discussions do not. It seems a testable hypothesis that people participating in the rhetorical situation afforded by a program like HyperNews will invent a genre of discourse that will be perceptibly different from those invented in other situations. (NKA)
Affordances and Constraints of Electronic Discussions.

by Russell A. Hunt
Affordances and Constraints of Electronic Discussions

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"Those who cannot remember the past are doomed to repeat it"

Over the past few years, we've all heard the hype about the potential of computer mediated communication to revolutionize teaching. It's not all hype: even once you've discounted the snake oil salesmen selling off-the-shelf electronic worksheets, style checkers and "interactive" computer-assisted learning programs, in fact there are still startling opportunities. There are many reasons, for example, to expect that electronic written discussions should afford unprecedented learning opportunities, combining the flexibility and interactive engagement of oral conversation and the power of written language to foster reflection and allow complex ideas to be accumulated, revised, extended and polished.

But there haven't been many demonstrations of this potential. Indeed, the most common consequence of setting up an "electronic discussion group" for a university class or a group of faculty at an institution is a flurry of initial greetings ("Hello, everyone, isn't it great to have this new way to communicate"), followed by an enduring silence. The flurry may last somewhat longer for students in class-oriented discussions, especially if participation is made a course requirement, but even in such cases, most often the quality of the participation quickly becomes perfunctory and unengaged -- usually not long before the instructor quietly allows the requirement to lapse.

Two related hypotheses are usually offered to explain this phenomenon. One is that there is only a very small proportion of computer users active and sophisticated (some might say, addicted) enough to read regularly -- persisting, for example, in checking mail or signing on to the bulletin board even after a number of occasions when there's nothing new -- and to feel disposed to participate actively. If the absolute number of those people falls below a certain critical level, there simply won't be enough postings to keep the discussion alive. ("That must happen very often," said Alice thoughtfully. "It always happens," said the Gnat.)

The second hypothesis is more disheartening. Suppose, it suggests, written discussion itself is a contradiction in terms. In this view, the physical and oral situation around an oral, face-to-face conversation -- the facilitative mechanisms like expectant silences, visual cues for turn-taking, the pressure of occasion -- are necessary to keep any extended dialogic exchange going, and that without them, any written discussion that is not driven by a specific and immediate necessity like a shared task will simply evaporate. This hypothesis is weakened, of course, by the fact that there do, in fact, exist electronic discussions which last for extended periods of time without significant face-to-face reinforcement or support. Still, such
successful discussions are few and far between, and one might conclude, on this basis, that because these factors are not amenable to change, there is little hope that electronic discussions will ever live up to the expectations many teachers had for them.

There are, however, other possible explanations for this failure, ones that offer some reason to hope that such programs might realize at least part of their potential to afford learning of discourse genres and conventions. It is my contention that the way electronic discussion programs have been structured (and presented and conducted) is itself the problem. These programs, for instance, disconnect us from the immediate past, forcing us to write unreflectively and quickly and fostering superficial and unfocussed discourse. Because many of the elements of electronic discussions which work against continuing discussions seem part of the very nature of the computer programs which enable them, however, those who work with them regularly are rarely, if ever, conscious of them as difficulties -- much less as difficulties to which alternatives might be offered.

One -- perhaps the most important -- can best be understood by considering the common observation by those who have been studying the composition process over the past few decades that producing coherent discourse seems to require (or at least is shaped by) looking back at text that's already been produced. James Britton, for example, recounted his and his colleagues' difficulties with "invisible writing." They wrote with spent ballpoint pens with carbon paper, so that there was a record of what they wrote but they couldn't see it, and reported that they couldn't produce coherent text (Sheridan Blau and Stephen Marcus reported a few years later that students writing in that situation reported no problems. It seems likely, however, that the students had far less investment in the coherence of their product). The sort of insulation from the immediate past Britton found so frustrating is precisely the situation that I contend users of conventional programs normally find themselves in.

One of the obvious consequences of being in such a situation is that your writing will tend to be structured by short-term association rather than long-term purpose. This is because planning is a recursive process. It could hardly be clearer, or more fully demonstrated in research on the composing process, that the writer looks back over what she's already written not only to see what she's prepared the groundwork for, but to remind her of possible ways ahead that she hadn't thought of. One of the most important pieces of input for the writer is the pre-existing text, and when that's gone important elements of the planning and text production processes are simply shorted out.

And, of course, every practicing writer knows that a good way past a stopped point is to go back to what's already written -- not just in order to think about it, but to reread the actual text. On rereading, that text is never, of course, exactly as you remember it: its particular character, the accidents of phrasing that have occurred in the drafting process, the particular choices of diction and of foregrounding and backgrounding structures and phrases -- even its presentation on the page -- put you in some sense in the position of reader, and open to potential surprises. And, as a writer, you use those surprises: it's part of the generative power of written text that you're always looking at the same ideas, in their particular instantiation, in a new way. Clearly, it will be a great deal harder for the writer to build on the already existing text in an orderly way if it's not there to be re-examined.

It may not be immediately obvious that the sort of social knowledge-structuring and relationship-creation that we see happening in a multi-voiced written conversation should be analogous to the process of an individual creating a coherent written text -- but on reflection we have much reason to expect a written
discussion to be subject to the same constraints and affordances. It's worth exploring, for example, the way in which electronic discussion programs make it difficult for participants to build on the past, directing participants' attention relentlessly forward.

There are at least three broad categories of discussion programs. There are "bulletin board" types, whereby users, access a program and an associated accumulating database of "postings," which are kept on a central server. Closely related are "newsreaders," which are programs running on the user's own machine, and accessing (grouping, processing and displaying) collections of postings stored on a central server. Finally, there are Email-based discussion lists, run by a "listserv" or similar program on a server which takes in electronic mail sent to a central address and distributes it to subscribers. The three work differently in detail but have the same fundamental character -- and all occlude the past from the user, just as Britton's invisible writing experiments did, though they do it in slightly different ways.

Every bulletin board-style program has as a central part of its structure a process whereby the program keeps track of which items each reader has already read, and does not present them to that reader again unless she specifically asks for them. Typically, she can do this by using a "page back" command to leaf back through already-read messages. These are normally organized by "strands," or subject or topic areas, and presented in (forward or reverse) chronological order, according to the time the original messages were posted.

A newsreader, on the other hand, typically asks the reader who wants to look at an already-read message to "Unread" batches of postings -- to remove the marking which identifies them as previously read -- ten or twenty at a time. Within the newsgroup there is usually no division into separate topic strands (newsgroups themselves have historically tended to be pretty specific), but the "subject lines" added by authors are sometimes used to arrange messages by subtopic.

Like newsreaders, the structure and appearance of email discussion lists varies depending on the user's own software (different email programs will present messages in startlingly different formats, and even include or display different information). They are alike, however, in that they differ from newsreaders and bulletin boards in how the messages are received and treated. Postings arrive as electronic mail, more or less in the order in which they were posted, and are then read at some point. On reading, the messages are then, at the reader's option, either deleted immediately or stored.

(In all three cases, it's important to remember that, as in the case of bulletin boards or newsreaders, when the messages are read is up to the reader. She may read them as they arrive, but is more likely to have set a certain time of the day or week for reading mail. An important difference between email and newsgroups or bulletin boards is that email is passive: the messages come to you, and typically their presence is announced when you turn your computer on, and presented as a list when you invoke the mail program. You have to make a decision to look at a newsgroup or bulletin board.)

Normally, this makes it even more difficult than with newsreaders or bulletin boards to access already read postings. You can, of course, keep such mail in a folder of some kind on your local system (you'll do this only, of course, if it occurs to you that you might want to reread it). But even if you do make provisions for storing mail, by default it's simply in a file of "already read mail," which may include messages from many sources other than the particular list. And in any case, if you create different "folders" for messages from different sources, the messages will only include those you've thought to save, and will only display them in
a limited range of orders -- chronologically, by subject line, by sender, etc.

Some lists maintain, on their own server, archives of previously posted messages that can be accessed and searched -- but, again, you as reader have to decide that you want to go back; not only that, you have to learn the individual searching routines of that system. In order to see what's there, in other words, you'll need to have a clear idea of what you're looking for and how to find it -- and you'll have to decide to go looking. If you're like most users (and an even higher proportion of new users) it won't occur to you -- in any of these situations -- that it's possible, much less useful, to go back. In no case will the way in which your current utterance might fit into a long-standing discussion be advertised to you: the obvious, focal connection will be solely to the immediately present message, the one to which you're directly responding.

What this means for most users is that they don't, in practice, look back at all. Most people do not, after all, have sufficient experience of computer networking to have developed an elaborate model of the "space behind the screen" -- a sort of mental map of what's been called cyberspace. (A student of mine once found a piece of recondite information in an obscure corner of the online library catalog. When I asked him how he found it, he told me, "It was in the computer." ) Thus the attention of most users is focused on the immediate forward edge of the wave of discourse creation -- just like Britton and his colleagues, writing on their pads and having the words vanish as they're created.

That's not all. There are other effects inherent in the structure of these programs which act to make coherent, reflective discourse dauntingly difficult.

One characteristic of the situation into which such lists put a participant is that it is very difficult to respond in any other way, or at any other time, than immediately. If you read a message, for instance, you might, for a number of reasons, decide that you'd like to respond but would like to put it off. You might not have the time right now; or need to do some reading or checking on external information, or take some time to reflect, before answering; or, as happens quite often, decide you want to see whether anyone else has already responded and carried the discussion further -- perhaps already making the point you're contemplating making. Whatever your reasons, the chances are overwhelming that if you postpone responding, you'll never get back to it. Even habitual and skilled users of such programs know that the next time you log on there'll probably be some further messages, that the message or phrase that you wanted to respond to will be hidden back in the unmarked backlog of messages to be uncovered, undeleted, found in the archives, or otherwise exhumed; that the discussion will have inexorably moved on (because everyone else is operating under similar constraints, and so the character of the discussion itself will be tilted toward the evanescent present). Like Frost's walker in the woods, having made your choice it's pretty doubtful that you'll ever get back to just that spot.

This raises another issue worth thinking about: the somewhat larger matter of the way the logic or structure of the discussion is displayed -- and, consequently, the way it's likely to be understood by the participant. In any of these programs, messages are displayed as some sort of list. Individual messages are identified by varying kinds of information -- which may (or may not, depending on the capabilities of the particular program and the way it's been structured by the individual user) include the date and time, the name of the poster, and a "subject line," which is entered or accepted by the author of the individual posting. Usually programs can be configured so as to display the list in a number of different orders -- chronologically (backwards or forwards), by sender, or by subject line.
If what you want (or need without actually knowing that you want it) is to see the structure of the discussion, however, none of these possibilities is very useful. If the list discusses a number of topics, sorting chronologically won't help you much; nor, obviously, will sorting by the sender's name. And the usefulness of sorting by subject line depends entirely on posters to leave the subject line alone when responding. If they do, associated messages will be clustered in the list, but as soon as someone feels her message will be made clearer, or cleverer, by modifying the subject line, or changing it altogether, the fact that the message is a response to a previous one will be altogether lost. And even if the subject lines stay the same, a message may be separated by many intervening messages from the one to which it's a response. (Many programs make it very convenient to incorporate into your text chunks of the message to which you're responding, so that messages won't rely on physical juxtaposition in a listing to make their relationship clear. Paradoxically, many new users report that this "included quotation" practice is one of the most confusing things about electronic discussions.)

A consequence of all this that is perhaps less obvious has to do with the fact that such lists are both "synchronic" and "asynchronic" -- that is, posted items appear in the data base or are distributed to subscribers almost immediately, but then remain available for at least some time (to conserve storage space, most newsreader databases have "expiry dates" after which messages disappear; archives or saved email messages last longer). Thus if you let the list alone for a while and a subject comes up that was discussed, say, a week ago, you don't feel invited to participate because the subject may be old, or the message may already have been responded to. If you wait to see if it's been discussed further -- by going on in your reading of postings and allowing it to be marked as read, stored in the archives or saved to your accumulating entropic file of unanswered email messages, it becomes part of the distant past, unless you specifically mark or save it as worth coming back to. You're at the mercy of chronology.

The consequences of all this for the character of the produced discourse are, I think, obvious. I believe they not only explain why lists collapse so quickly, but also account for most of the often-noted characteristics of this kind of discussion -- such as their superficiality and the way in which subjects often appear and are forgotten within a few messages, with response chains typically only having one or two links.

In other words, such discussions resemble oral conversations in their intractable tendency to wander and be structured by immediate acts of association. They use visible language, in other words, but with all of the disadvantages of writing (it's mechanically slow, it foregoes the immense communicative bandwidth afforded by aural and visual cueing systems, shared material circumstances, and so forth) -- and with none of the advantages.

I should say again that it's possible for skilled users and people with powerful motivations to discuss shared interests to find their way around these difficulties: as I said at the outset, there are long-running, intense and serious discussions of substantial issues. They are regrettably rare, however: most people find the obstacles insuperable.

Were these the only technically possible ways to construct computer-mediated discussions, or if we couldn't imagine alternatives (whether we knew how to implement them or not), this would of course be a pretty depressing state of affairs. The characteristics I have been describing are not, however, inherently part of the discourse situation of computer-mediated communication.

It is possible at least to imagine a situation in which preceding utterances are immediately and perceptibly
available to the participant in a useful and accessible form, offering more functional information for planning and shaping the discourse: offering, in fact, what I call "back pressure" (related to what Bakhtin called "answerability") that is very similar to what a conversational dialogic situation can offer to the creation of an oral utterance. It is possible to imagine a program which doesn't insist that you respond now or never, one that fosters reflection, using the power of written language to support extended and engaged discourse.

I have been trying to imagine such a program for some years, and it has recently become clear that alternatives are not only conceivable but also possible. New ways of structuring written discussions are appearing, using some of the logic of the traditional programs and adding new elements made possible by the development of the World Wide Web and the various "web browser" programs for navigating it. One program I am aware of which demonstrates this potential is called HyperNews. It is under development at the University of Illinois. What a program like HyperNews offers us, primarily, is a different, and more immediately visual (and more uniform, from user to user), way of presenting the list of read and unread postings, based on the cross-platform flexibility and graphic capabilities of the World Wide Web and web browsing programs.

Such a program makes possible a number of activities that older programs for conducting, constructing and recording text-based discussions don't, and thus addresses these problems -- including the disappearance of the past. One way to make clear the differences between the situation I have been describing and this new one is to imagine a new reader joining a discussion in progress.

If she signs on to a bulletin board, there are two possibilities: the program may present her a list of all the messages so far posted to the particular subject or topic strand (in many cases, the sheer number of messages is so daunting that the reader gives up immediately), or it can present her only with messages which are posted after the moment she joins. Thus she will be in the position of the new arrival in Kenneth Burke's parlor -- trying to infer what the conversation's about, what has been said and what hasn't, what's being assumed as given, what registers are appropriate, and so forth. Although the "page back" option will available, few new readers will use it -- besides the complexities involved in learning how do do that, the messages will usually appear in reverse order, making the discussion difficult to reconstruct. If they are interested enough at the beginning to keep reading -- or if the posters are mostly friends -- they may eventually pick up a sense of the ongoing discussion (if there is one).

If she adds a newsgroup to the set being tracked by her newsreader, she'll see only new messages (again, "Unread" will be available, if she knows about it and in the unlikely event that she chooses to use it).

And finally, if she joins an email-based list, she'll receive only the messages posted from that point on (previous messages will be available only if the list happens to keep an archive, and then only to someone willing to learn the procedures involved in accessing that database).

Someone joining discussion organized and presented in the way HyperNews does it, however, would find herself in a rather different situation.

First, she will join the debate through a program she is probably already used to. The generic web browsers which give multi-platform access to HyperNews sites are used for many other purposes than such discussions, unlike newsreader or bulletin board programs. In just the same way as she may previously have
typed the location of a source of information -- a library database, a friend's web site, a university online calendar -- she types in the address of the discussion. What appears on her screen, as with a newsreader or a bulletin board program, is a list of postings. In this case, however, there are number of elements which -- once their function becomes clear -- make it much more possible to see the structure of the existing discussion. A typical opening screen looks like this.

A number of characteristics of this screen are worth noting. One is that the messages -- identified by author and subject line -- are arranged in an outline form hierarchy, with the structure of the relations among the messages marked by indentation. If message A is a response to message I, it will be immediately below I and indented one unit: if message 1 is a response to A, it will be below in and indented another unit. If message B is a second response to I, it will appear below A and all its responses, and indented, as is A, one unit. One consequence of this, obviously, is that chronology becomes less important and the logic of the conversation more so. Another less obvious consequence is that the way the relationship is presented graphically is determined not by what subject lines the writers choose for their message, but by the actual relationship among them: if you respond to a message, your response will appear below it, whenever you choose to do so. This means that subject lines themselves can become more descriptive of the nature of the message. They don't always do so, of course, but the situation allows the reader to signal things about her message and still preserve its position in the graphic display (on a newsreader, changing the subject line would cause the message to start an entirely new category of message, beginning a new chain of message & responses -- if, that is, anyone responded without, in turn, changing this new subject line).

What is most important about the fact that the program is based on the World Wide Web is that each message listing is defined as a link, meaning that if you click on it, the message it designates appears immediately onscreen, replacing the outline list of postings. Going back with the web browser takes you immediately back to the outline; forward back to the message. This ease of navigation back and forth from structure to discourse is an important part of the way such programs promote keeping participants in touch with the past -- with, that is, the structure of the discussion.

Another feature of this screen linked to its status as a web-based program is that the system uses the capability of web browsing software to mark links the user has already looked at by changing the color in which they're displayed. As the reader explores the discussion, the listings of messages she's looked at change color. Thus, in effect, the pattern of what she's seen and not seen is created graphically.

Yet another way in which the screen can help the reader into the discussion is that the most recent messages are marked with a highlighted "new" notation. After the message has been on the system a designated time -- perhaps 48 hours -- the notation fades to black, and after another set interval -- say, a week -- the "new" designation disappears altogether. Further, each message listing begins with an icon identifying the relation between the message and the one to which it's a response. (The icons stand in for words like "question," "agree," "disagree," "more," "feedback," "warning," "idea," etc.)

The icons seem less immediately valuable as a help to the new or inexperienced participant's reading than are the outline structure and the fact that it is the actual structure of the dialogue that is displayed. The icons, for instance, like icons generally, actually take more time and attention to decode than words do, and once decoded are of marginal help in deciding what to read or how to understand it while reading.

The icons, however, are useful to the participant as a potential writer, in that as she begins composing her
Another characteristic of HyperNews that I have not seen in another discussion program is apparently a consequence of the way the text is handled when it is being posted to a Web site. The writer is offered an editing window (too small, in my view, and with some nagging difficulties involving editing capabilities) in which the draft text appears in what looks very like typescript -- equal-width characters in a Courier-like typeface. When you're finished editing, you can't (as you would with other discussion programs) simply press a "post" or "send" command. You're prompted to "preview" your message. You then see the message reformatted as it will appear in the discussion -- not only with the information about what it's a response to and what its relation is to the response, but completely reformatted so that the letters are optically-spaced and in whatever typeface the reader's web browser uses. In other words, they're in "published" form (and, as is usually the case with the web browsing programs, remarkably readable for computer-screen text). The writer -- as powerfully as I've ever seen it done -- is put in the position of reader.

At this point you have two options. You can click on the browser's "back" option to go back to the editing window to make changes, or you can click on a button which posts the message. What I find interesting here is that even I, an impatient poster and whose one first response to this process was to see it as an annoying delay and to ask whether it could be bypassed) almost invariably do go back to edit; I regularly see things in this reading -- that I don't when looking back over the text in the same form in which I drafted it.

Conclusion

I hope it is clear that I am not here primarily concerned with the virtues and failings of HyperNews or any other particular program, but with the rhetorical constraints and affordances of the electronic discussion itself. I also hope it's clear that when I talk about constraints and affordances I'm not talking about bad things and good things (constraints aren't necessarily bad -- in fact, constraints are simply parts of the definition of objects and concepts. You can't tighten a nut with a hammer).

What I want most strongly to argue here is that those of us who have seen the potential of the new forms of electronic text handling for teaching, and especially for helping students become engaged with written text in new and dialogic ways -- but who have been disappointed by what's actually happened in practice -- should not assume that the form has been tested and found wanting. Like Christianity, we might say, it ain't been tried yet.

A note about genres

Given all that, it seems to me at the very least a testable hypothesis that people participating in the rhetorical situation afforded by a program like HyperNews will invent a genre (or genres) of discourse that will be perceptibly different from those invented in other situations.

A note about MOOs and IRC and synchronic discussions
It might be argued that just as oral conversations tend to be focused on the future rather than the past, and that we should also expect conversations conducted this medium to be so oriented. And certainly some kinds of electronic dialogues are so oriented: the real time conversations that occur at MOO or MUD sites, or on Internet Relay Chat, are so designed that discourse scrolls up the screen and disappears as new utterances appear at the bottom; in an active MOO session new text at the bottom of the screen may be appearing almost as fast as you can read (as multiple interlocutors weigh in), and discourse may remain in memory -- that is, available on the screen to the participant -- for a matter of seconds.

But such conversations have much more to keep them rolling than do asynchronic discussions like lists and newsgroups: though they do not have the power of actual physical presence, they do have the pressure of occasion (as in an oral conversation, an utterance postponed becomes increasingly more difficult to wedge into the conversation as time goes by) and even something that acts a bit like an expectant silence (though it's never clear onscreen, as it would be in a face-to-face conversation, that a potential speaker isn't just finishing typing -- perhaps even editing -- a response.)
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