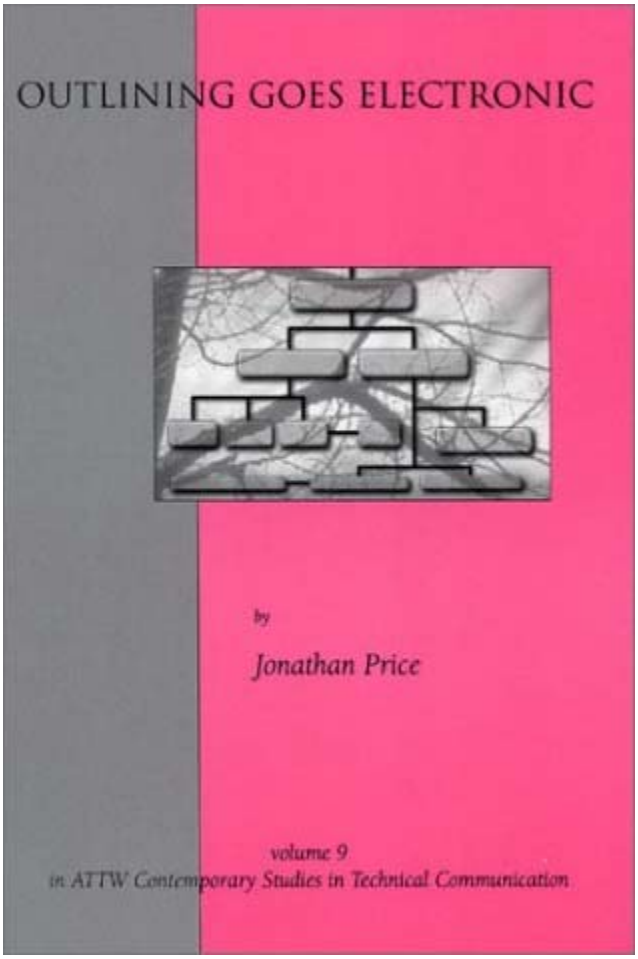

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Extending the Collaborative Conversation

All writing is conversation. Even when we write alone in our offices, we are responding to our readers' unvoiced questions, rereading the notes of subject matter experts, consulting earlier writers on the same subject, rereading our own work of yesterday as if it had been put together by a stranger. As Bazerman (1994) says, "The conversational model points up the fact that writing occurs within the context of previous writing and advances the total sum of the discourse" (p. 49).

The internal conversations with our previous draft also lead us to question our own phrases, doubt our earlier solutions, recast definitions, and, sometimes, rearrange the order of our topics. Most writers think of such muttered discussions with one's self as revolving primarily around issues of understanding and expression, perhaps because we have never recognized the extent to which we add value to our documents by organizing them well. But some of our internal

debates do revolve around arrangement. In our muted conversation with previous writers, we may notice their ways of organizing the material, argue with those structures, adopt and modify. And as we meet with the members of the team with whom we are generating a document, issues of organization form an important part of the conversations.

In this chapter, I will argue that outlining software encourages and enables writers to talk together about structure on the job, and in the classroom. At work, technical writers work together in ways that span the spectrum from mere compliance to full collaboration; the degree to which the writers really work together depends on many factors, such as management commitment, personal taste, and organizational culture, but if those are favorable, then people depend on sociable routines, such as regular face-to-face meetings, and convivial tools, such as outlining software. In collaborative conversations using the outlining software as a tool, structure becomes the most valuable topic of discussion, and the most useful result. In the classroom, the teacher acts as a guide, catalyst, and coach, but the whole class pursues meaningful structure together, using the outlining software and a wall projection of the developing outline. Because it is a classroom, though, the teacher can also step in a times to point out that the activity is itself an example, a demonstration, a proof of the social construction of knowledge. So although the work experience produces far more pages of results,

the classroom provides an opportunity for reflection on the collaborative activity itself.

Using the electronic outliner to further conversations at work

The technical writer must often have extensive conversations with other writers who are working on related chapters, documents, or systems, as well as with the other people on the project team—subject matter experts, managers, marketing geniuses, engineers, testers, and even some members of the target audience. In all these work situations, we commonly see a range of ways of working together on communication (Allen et al., 1987; Ede & Lunsford, 1990; Gere, 1987; Price, 1992). Here are a few points I see on that spectrum:

- **Compliance**: When a writing team is ordered to comply with standards, they often find hundreds of occasions on which they can ignore the very rules, styleguides, and editorial advisories they have been told to follow. Individuals disregard the official style; talk to the wrong audience; rearrange sections arbitrarily, all the while pretending not to notice that they are not really complying fully. Compliance, then, is a dance of apparent obedience alternating with "misunderstandings,"

oversights, and willful disregard. The result, for the reader, is a bumpy, disorganized, and erratic set of documents.

- **Compromise**: When disagreement surfaces on the team, each side gives up part of what they sought, in order to get their own way in another area. The result, for the reader, is often a document that is self-contradictory.
- **Cooperation**: The team may work together to produce standards, but each writer owns his or her own section, retains a personal style, and reserves the right to override group decisions during writing. Users of the document may discover it is stitched together, with confusing differences in the formatting, organization, and style of the different sections . Cooperating leaves us independent. For instance, you write one chapter, and I edit it lightly; then I write a different chapter, and you edit it lightly. We keep our distance; you're in charge of your chapter, and I'm in charge of mine. We negotiate changes, we suggest things as delicately as we can, and then live with whatever the other does. We do not really merge out best thoughts in every part. As a result, the reader encounters documents that are uneven, patchy, not thoroughly integrated. Most so-called collaboration in industry is really more in the nature of cooperation. Similarly, most computer-supported collaborative work software aids cooperation—improving electronic mail

connections, joint scheduling, and mutual editing, while leaving each person the opportunity to make an individual contribution. As Duin (1991) points out, many team writers have to work asynchronously:

> …one person had to finish something, send it to someone else, and wait for the other person to respond on a system that often allowed text-only communication. Thus, the technology has not provided to collaborators anything close to the degree of interchange, stimulation, and speed accomplished by people working together in the same room. (p. 100)

- **Full collaboration**, as I have experienced it, means working together so thoroughly that none of the writers end up owning any one part, chapter, or sentence. The best collaboration, I argue from my own experience, occurs when you work together in person. You have to see the other people, sense what they are thinking, picking up nonverbal cues, and responding immediately in order to move forward together. Such speed and efficiency depend on direct human contact. All intervening media, even the ones with the highest bandwidth, slow down and impede the interaction, because they filter out some of what we can perceive in less than a second, when together. Real time, in this

case, is the speed at which two human beings can interact in person. Everything else is time delayed, media-buffered, limited.

Full collaboration, as I define it here, is psychologically challenging. Collaborators must agree to argue until they reach real agreement, not a halfway compromise or acquiescence, because those so often lead to the disagreement resurfacing when the individuals write different sections, each in their own special way. Each person must speak up the moment disagreement is sensed. And as long as two people disagree, the discussion must go on, no matter how long it takes—no easy voting or hand-waving to make it go away. There can be no secret reservations, to be brought up later in a fit of pique, or in elaborate foot-dragging. Everything is improvised, too, so each writer has to plunge in saying the almost-right thing, before having fully articulated it, counting on the other person to continue the idea. Each must pick up the thread of an idea when the other person loses it. First one person commands the keyboard, then the other; one leads, the other follows. The aim is to understand the material together, and produce a document that truly serves the audiences, and if any other aims creep in (such as finishing by five, or just handing something in to be done with it), the collaboration quickly dissolves. The emerging document must be mutually owned, too. Full collaborators must be willing to be paid or evaluated on the collective results. Unfortunately, good will is essential—toward each other, and toward the ultimate audiences. Hard to define, easy to recognize, such a spirit goes beyond

camaraderie, forcing each collaborator to confront the American cultural bias toward individualism. Individualism, in a team of writers, leads to problems for the reader, such as missing sections, predicted sections that do not appear, contradictions between sections. But if the collaborators can reach full agreement on an outline, then, in my experience, they can go off to write the pages separately, and when those pages are brought together, they will fit like the joints of a cabinet (Price, 1992).

Routines and tools

Writers can lay the foundation for collaboration with sociable routines and convivial tools. The team members must agree to meet regularly, for fairly long blocks of time. (The team cannot work well together if one member repeatedly skips meetings, or another shows up late, and leaves early.) The team members need to agree on housekeeping details, such as consistent file names, version control, templates, styleguides—all the mechanisms that keep a team from losing a draft in a black hole. But the key is regular face-to-face meetings, with full debriefings, so no one squirrels information away in secret or hides a problem. Unlike a conventional team meeting, in which everyone reports progress, collaborative meetings must take a problem-solving approach, to take up issues and resolve them within the meeting, rather than delegating, postponing, or voting to ignore. But unlike traditional meetings, the collaborative meeting must

also focus on creating a shared document. Matson (1996) argues that conventional business meetings have to "Convert from 'meeting' to 'doing'—where the 'doing' focuses on the creation of shared documents that lead to action. The fact is, at most computer-enabled meetings, the most powerful role for the technology is also the simplest: recording comments, outlining ideas, generating written proposals, projecting them for the entire group to see, printing them so people leave with real-time minutes. Forget groupware; just get yourself a good outlining program and an oversized monitor" (p. 123).

The best collaboration, I believe, involves direct observation of the other people, listening to what is said, challenging it immediately if one disagrees, arguing to a real conclusion, and observing, as well, all the nonverbal cues to monitor the ongoing emotional and social agreements. Writers develop such routines to make it easy (and efficient as a business activity) to work side by side.

As suggested by Illich (1977), a convivial tool is one that lets you use it to add meaning and design to your work, whereas an unconvivial tool is one that forces you to follow its quirks, bend to its will, and submit to its conventions, no matter what, if you are to succeed at wheedling out even a small transaction, such as booking an airline ticket. Zuboff (1988) and Landauer (1995), for instance, document plenty of "unconvivial" computer applications. Some electronic tools make it easier to work together, but do not guarantee conviviality. Groupware products help disseminate information quickly among team members, routing and

filtering the flow, handling version control, monitoring review assignments, and generally driving the document toward publication. Other products provide various environments for conferencing among people who are not physically meeting together. Winograd & Flores (1986), inventors of a product to manage the electronic conversations within an office (the Coordinator™ Workgroup Productivity System) make a major theoretical statement when they argue "Computers are a tool for conducting the network of conversations," but then, perhaps in order to create a salable product, they focus on "conversations for action" (p. 159), and attempt to limit interoffice email to exchanges in which users must explicitly identify each email as either a request or a promise, an offer or an acceptance, a report or an acknowledgement. In effect, the software forces users to adapt to its discipline, rather than changing to match the actual conversations, including, for instance, those inefficient, emotional, and rambling exchanges in which employees struggle to reach agreement on a definition, structure, or sequence of ideas—or those imaginative exchanges in which employees attempt to avoid taking any action whatsoever. Helpful as they may be, from a manager's perspective, such products encourage people to stay apart, cooperating, but not fully collaborating. But, in my experience some tools do encourage the conviviality of full collaboration: large screens, so everyone in the group can see the ongoing development of the outline (so different from scribbled notes in the margin of review copies); project management software (so all deadlines are clearly known

to everyone); scheduling software (so everyone can get together), electronic mail; and, most important, electronic outlining software, as a way to record and advance the conversation in person.

Just as word processing software helps writers exchange drafts, criticize and discuss their works together, and even collaborate on documents (Costanzo, 1994; Daiute, 1986; Duin & Hansen, 1994; Ede & Lunsford, 1990; Eldred, 1989; Hawisher, 1987, 1994; Humphrey, 1987; Rodrigues & Rodrigues, 1986), electronic outlining helps a few writers work together sharing the same keyboard, looking at the same screen, as they develop a structure they all can agree on. That's direct collaboration. Theorists have argued that creating hypertexts together fosters the exchange of views and consolidation of ideas in a group (Adelson & Jordan, 1992; Barrett, 1988, 1989; Barrett & Paradis, 1988; Hedden, 1992; Irish & Trigg, 1989; Johnson-Eilola, 1994), but these experiments tend to rely on software explicitly created to allow people to make hypertext links, often over networks rather than in person. Electronic outlining, because it focuses on structure more than running text or links, actually offers professional writers a better tool than either word processors or hypertext editors for collaborating where it counts, that is, at the level of organization, not links and phrases. I have seen that when a team reaches full agreement on the organization, team members can consistently carry out stylistic decisions and insert links, without having to consult each other. But when the team has not beaten the rough edges off a structure, any attempts at

individual writing go rapidly astray, resulting in patches of redundancy, inconsistency, ambiguity, failed transitions, and confusion.

An electronic outliner is an especially helpful tool for collaborating on the organization of large volumes of complex information, like that most technical writing teams face, for a number of reasons.

1) The screen displays the outline as it now stands, the keyboard lets a writer enter new material and edit, the mouse lets the writer click and reveal, or click and hide, as the team explores and reconsiders. For the first time, the evolving plan is *continuously* available in a clean, readable form, for *all* the people who are creating it. Instead of drawings on the back of envelopes, and marked-up original drafts, with blotches, the screen shows the outline as it grows, so the team can revise it intelligently.

2) By displaying the outline as the team creates it, the software forces each member of the team to look at and really think about the order of topics, the writing of each topic, the meaning of the whole. The participants see it while together, debate it, and improve it together. As Kaufer et al. (1993) remark in another context, "Individuals need to make their ideas visible and persuasive to themselves as well as to their collaborators" (p. 37).

3) When one writer suggests a change, everyone can see how it affects its surroundings, right away. (By contrast, think of all the suggestions given at a review meeting, in which change upon change is built on air, and no one can

really foresee the net effect of all these proposed revisions until the writer sits down later, and tries to apply them all).

4) When everyone realizes that nobody knows what a particular phrase means, someone can look it up right there, or the group can assign someone to track down the facts, rather than leaving it in the outline as a placeholder.

5) Whenever a team member feels uncomfortable with a phrase, or a patch of topics, that person can speak up, forcing the others to reconsider. As Burnett (1993) points out, conflict is critical if collaborative decisions are to consider alternatives. Battling to agreement, the team members articulate contrasting models, and hash over the evidence. Everyone is forced to review the information itself, as well as the way it has been organized. As a result, everyone learns it very well. Also, the minor ambiguities that one person could tolerate will probably offend someone else, so many fuzzy patches get cleared up. The result for the reader: a structure that has been vetted from several points of view, and therefore an organization that has fewer spots of confusion.

6) The outline on screen serves as a focal point for intense conversation. As Winston Churchill once said, conversation is "The worst possible way to get things done, except for all the rest." (Plumb, 1990, p. 208). Conversation, pleasant in itself, moves the outline along, even if the outline is never complete, but always open to new input. Here is another way in which electronic text finds its way toward the new paradigm for writing envisioned by Lanham (1993)—

"interactive online conversation." (p. 78). Meeting in person, but using this electronic display, the team learns from each other and comes to a series of agreements, so that any further individual work has a much greater chance of being in sync with that of everyone else than would have been the case if everyone had worked alone, and emailed sections back and forth.

The structuring conversation

During face-to-face conversations the team engages in many of the structural activities I described in Chapter 2, and those often lead to additional research, notes, and drafts of actual passages. In creating an online help facility for an order entry system, for instance, my partners and I started out by postulating the following sections, among others:

Creating an Order
Saving an Order
Sending an Order
Printing an Order
Checking on an Order's Progress
Canceling an Order
Archiving Orders That Have Been Received

Given what we had heard from the client, this organization seemed fine, and we began to explore the next level. Creating an order seemed fairly straightforward: the user chose New from the File menu, picked a type of order (for finished goods, spare parts, or service), then filled out a two-part form (a message area, and an order area).

Unfortunately, as we got down to the level of steps, we discovered that the three different order types had wildly different forms. We were writing branches and if statements left and right ("If ordering spare parts, skip to Step 8.") We could see that the procedure was getting entirely too messy, and we wondered why the interface itself was so inconsistent. When we went back to the engineers to ask if they could consolidate the forms, or at least make them resemble each other a little more, the engineers agreed to make all the common fields look the same, so the address block, for example, would always appear in the same location, font, and layout. But they insisted that they must have three distinct forms. During this discussion, a junior engineer mentioned rather casually, "Oh, you know, the service guy never orders finished goods, and the sales people who order the finished goods don't have anything to do with service or spare parts, and usually only the boss of the service section gets to order spare parts." Suddenly we had a new perspective on the situation, one that forced us to alter our earlier high-level approach.

Now we were faced with three different users, each of whom dealt with only one kind of order. The sales people would not want to hear about spare parts and service; in fact, any mention of these topics could be confusing to the sales people. So we concluded that we should put all three order types at the top level of our structure, so users could pick their own order type, and never bother with the others. So our top two levels for these topics looked like this:

Placing a Finished Goods Order

Creating a Finished Goods Order
Saving a Finished Goods Order
Sending a Finished Goods Order
Printing a Finished Goods Order
Checking on a Finished Goods Order's Progress
Canceling a Finished Goods Order
Archiving Finished Goods Orders That Have Been Received

Placing a Spare Parts Order

Creating a Spare Parts Order
Saving a Spare Parts Order
Sending a Spare Parts Order
Printing a Spare Parts Order
Checking on a Spare Parts Order's Progress
Canceling a Spare Parts Order
Archiving Spare Parts Orders That Have Been Received

Placing an Order for Service

Creating a Service Order
Saving a Service Order
Sending a Service Order
Printing a Service Order
Checking on a Service Order's Progress
Canceling a Service Order
Archiving Service Orders That Have Been Received

But then as we wrote the actual procedures following the stage where the user filled out the form, we discovered that, for all three types of orders, the procedure steps were exactly the same. So we revised the organization one more time to reveal that fact, and raise more choices to the top level:

Creating a Finished Goods Order
Creating a Spare Parts Order
Creating a Service Order
Saving an Order
Sending an Order

Printing an Order
Checking on an Order's Progress
Canceling an Order
Archiving Orders That Have Been Received

A side benefit of this new organization was that each top-level menu item led directly to a step-by-step procedure, rather than a submenu, speeding up user's access to the information they might need.

The solution is a local one. In other circumstances, a different structure would be appropriate. But what is apparent, even from such a brief narrative, is that discoveries made at the lowest level sometimes have an impact at the highest level, and that research into the users' situation can, in such an open environment, lead to a restructuring to map the topics more closely to their way of thinking. Constant tinkering (clicking toward improvement) characterizes the collaborative work on structure, compared to the way most writers deal with a traditional table of contents in a document design, which is to leave it alone after the initial approval, any changes being made impromptu, without considering the overall effect.

Thus, the outlining software lets writers and other members of the team work closely together, creating and interrogating a structure down to any level, viewing it as a user might, ironing out the ambiguities, overlaps, duplications, and detours along the way. The process is fun, and gets the work done. As DeKoven (1998b) says, advocating the use of outliners in business meetings, "Key to the

fun is what is actually getting done—by each person, and by all of us together. The sharing of work. The contribution of the individual magnified and multiplied by the contributions of the community" (n. p.). And the electronic outline acts as a way of recording and making visible the team's evolving agreement.

Using the electronic outliner in a classroom

When I teach professional writers in workshops, I often bring outlining software with me, to record and project our opinions on the wall and to help us work together to compare and choose among many alternate structures for their information systems. And when I teach undergraduates in technical writing, I sometimes use the software to encourage students to brainstorm, outline, do more research, outline, rewrite, outline, and finally to consider the emerging outline as an outward and visible manifestation of the ongoing conversation (Price, 1997d). In this section, I'll explain how I use the software in the classroom.

Preparations

As homework before class, I often ask students to read through research materials such as a set of functional specifications, a rough draft of a manual, or an earlier version of a manual we are going to revise.

In the classroom I connect a computer to equipment that displays the screen activity on the wall. In this way, I can modify whatever text we are working on, and students see the results as I type. Depending on the layout of the room, the projected image can be read by 10 to 60 students. Where possible, the computer is also networked to a printer, so I can print out the results of our class discussion and give copies to students during class.

I make it clear to students that their own individual work will grow out of the collective outline we are about to create. Individuals may have to take a section and turn that into actual procedures or reference materials. So each student has an additional, individual incentive for making sure that personal views are reflected in the emerging document, and each recognizes the need to understand how topics have been carved up and portioned out.

Brainstorming: Collaborative invention using the outliner on the screen

With the objective of discovering all the topics we might write about, we start brainstorming. We generally follow the rule that we must accept each idea without criticizing, and students quickly get into the rhythm, suggesting their own ideas, borrowing phrases from the paper materials, sometimes explaining their contribution, sometimes just shouting it out.

To avoid burdening students with the chore of learning a new piece of software (often a real problem in computer-supported collaborative work, in my

experience, and as reported by Forman (1991), I am usually the one at the keyboard, and I type as fast as I can, to make sure I get every word right. When students have taken over the keyboard, they have complained that the pressure of typing makes it hard for them to participate in the discussion; so, although I am in control of the computer, I am acting as a servant of the discussion, and I facilitate their discussion by acting as their recording secretary. I hate blackboard brainstorming, where the facilitator listens to you talk for five minutes, then puts up one word. If someone has a ten-word heading, I take it all down. I have to practice listening, a skill not always associated with teaching, as Coles (1991) points out. If I haven't heard it all, or if I forget part, I make sure the student goes over every word, so nothing is left out.

My approach, then, resembles that advocated by deKoven (1998a), founder of the Institute for Better Meetings, who sometimes describes this role as "technographer." He argues for using outlining software, "You take down exactly what the author tells you to take down. And you take your time, and everybody else's, to get it right" (n.p.). He distinguishes this method of recording ideas from blackboards, white boards, and flipcharts, on which people are competing for space, and the recorder therefore "interprets" or "condenses" what was said. "Using a computer, sharing a desktop, we never run out of room. There are no physical limits to how many ideas we can represent and play with at the same time. Therefore, we can allow no one the right or responsibility for interpreting

our words. We can work together here. We can make things. But we must each individually contribute, and individuality takes responsibility for our contributions, because we can, and we want to, and if anybody else does, the connection gets lost: the connection between the speaker and the screen, between the speaker and the community, between the community and the work" (n. p.)

In another article, DeKoven (1995) describes this role as the Shareperson:

> Through the art of the Shareperson, everybody gets heard, recorded, represented equally. … The art of the Shareperson is to make sure that we can all work on, be represented by, have access to, approval over, be empowered by the shared desktop. … The Shareperson works to everyone's benefit, like a host of a barn raising. (n. p.)

As soon as someone has suggested a topic, it appears on the wall. Consider the effect. The software publishes the idea, grants it a place of honor, and places the idea at the center of discussion. Trainers say that feedback delayed is no feedback at all (Mager, 1988), so, in effect, this approach rewards each student promptly for contributions.

Occasionally one student will revise a phrase someone else has just suggested, and in this case I type both phrases. We may go on, or if a dispute breaks out, we may thrash out a resolution, rewriting one or both of the

suggested topics. I point out that collaboration does not mean smiley-face acquiescence, but rather confronting real disagreement, postponing consensus, and figuring out what we really think (Burnett, 1993). Sometimes the resolution depends on going back to the original sources and rereading to come to a better understanding of the subject. In this way, even though we are officially just inventing, we are also revisiting research and reconsidering our ideas.

As the discussion continues, new ideas keep appearing, and eventually each student's contribution scrolls up out of sight. Occasionally, when inspiration stalls, I scroll back through the list. At this point, the individual's contribution has become a part of the group's product. Even if a student still feels ownership of a golden phrase, he or she can see that it has become part of a document created jointly by the class.

I leave my own ideas out, so the list belongs to the students. Authority, at first problematic in many group writing situations (Cooper & Selfe ,1990; Kremers,1990; Moran, 1990), becomes less of a distraction when I act as their secretary; I retain authority while giving some of it away—as opposed to pretending that we are all sharing authority, as described in Zuboff (1988) and Loehr (1995). If the discussion goes well, I stay out of it; if the students get bogged down, I may ask a leading question or suggest they turn back to the paper materials for ideas. I resist adding any of my own phrases to the list, even if I know they have forgotten something important, because I have found

that the subsequent work of revising the outline will usually force an encounter with missing topics. We hand the mantle of authority around, putting one person in charge, then another, reducing my grand persona as professor, and elevating their individual importance, one at a time, while granting the group as a whole the right to make major decisions. In this sense, I sometimes manage to become what Rymer (1993) describes as an instructor who is also a collaborator.

When the list reaches stasis, or everyone is exhausted, I print it out for everyone to look over. Then we focus on re-organizing the list to satisfy the needs of the various target audiences.

Coaching the team in outlining

Once we have the rough list of topics, I move from the role of facilitator to coach. I encourage, cheer, criticize, make suggestions, but leave the evolving document to the students. The situation is artificial because they are not my employees, or co-workers, or professional writers; in many cases what they write will not actually be used. The artificiality of a class exercise, like that of sports or games, gives us a certain freedom from consequences, but for some students, that unreality also induces a lack of seriousness, a detachment, and casual insincerity. By turning the work back over to them, I am acting as I do

with professional writers in a real corporation or lab; in that sense, I am just a coach, so more of the responsibility for doing a good job falls on their shoulders.

As coach, I urge students to begin by deleting duplicates and merging topics. Performing these activities takes us through the list of topics again and again. As we get entangled in research and discussion, we gradually create a many-leveled organization and polish the language. The visual nature of the outline helps us analyze and develop quite complex structures, contrary to what Tuman (1992) feared when he imagined that in situations without a printed text, people would have no opportunity to shape "disparate thoughts into a unified document" (p. 4). On the contrary, the projected outline makes each person's idea visible, for self reflection and group study. In my class comments, I try to move all these activities out of the area of the "dimly perceived" to the explicitly recognized (Bazerman, 1994, p. 11). I point out what we are doing in each pass, naming each outlining activity—identifying additional topics, annotating a topic, deleting or merging, dividing a topic into subtopics, assembling a new topic out of others, disassembling a set of subtopics, promoting or demoting a topic, grouping, sequencing, rewriting to aid comparison, rewriting to reveal structure, and just plain writing the text under a heading. In this way, I am shifting the focus momentarily from the outline as artifact to the kind of thinking we are doing together.

As a constructivist tool, then, the software allows students to carry out the same activity on many portions of the material, learning to apply that line of thinking in many different contexts. The many activities encouraged by this software help to model another aspect of outlining: the fact that to do outlining well one must sometimes go back to research to learn more, then, on returning to the outline, one must often do some rewriting to reflect what one has learned. All three kinds of activity take place in the same electronic site.

When students recognize that we have been iteratively cycling through a number of activities that students originally thought of as occurring only in distinct stages, I see many students begin to get over their tendency to typecast the outline as a boring, arbitrary document that is supposed to be created after research and before any writing, essentially a set of notes to prove to the teacher that they have done their reading.

The recursive nature of outlining becomes clear, just as word processing helped demonstrate the looping-back dynamic process of writing (Emig, 1971; Flower & Hayes, 1981a, 1981b, 1984; Flower et al., 1990; Hawisher, 1994; Hult & Harris, 1987; Moberg, 1986; Schwarz, 1985).. Students begin to see that they can go beyond the model many of them learned in high school, a variation on the distinct stages in the textbooks of Warriner, Mersand, & Griffith (1958, pp. 379-380). (First you research, then you outline, then you write). "I thought I

was crazy the way I did a little of this, then a little of that," one student remarked. "But now I see that's normal."

I sometimes anthropomorphize the emerging outline as a robotic participant in our conversation, a speaker who has a better memory than the rest of us, being able to replay our latest agreement, and remind us of what we all thought a few minutes ago. "Revising this way," one student commented, "is like looking at our work as if someone else had done it." Like the extensive revisers of drafts who adopt a certain distancing to get a better picture of the text (Beach 1976), the students get to re-see the text. Such decentering (Fitschen, 1986) makes the outline into the trace that Witte (1992) describes when he says that any meaning emerging from a document is the result of "Processes of negotiating the intellectual and emotional space between the 'self' and the 'other,' between the individual and the social, as the multiple voices of distinct constructive semioses mix on what might be called the battlefield of the 'trace'" (p. 287). So electronic outlining does more than allow students to carry out activities that were difficult to do over and over on paper; it provides visual evidence that we think in these ways.

Reflecting on our social construction

As a class we are engaged in purposeful conversation. We have an aim, but we are also talking with each other, in person. Despite our goal, we make

jokes, detour off target to gossip, come back on track. The somewhat erratic path keeps the talk lively, gradually drawing people together, encouraging the shy to jump in, reverting to chat at times, then getting back to business.

As the discussion continues, I sometimes ask students to talk about what they see happening. Their comments stress several themes—their growing knowledge of the subject matter, the fact that the outline is "only temporary," and the fact that no one person owns any particular piece of the outline anymore. The outline, then, has become an outward manifestation of the ongoing conversation, a temporary record of the collective understanding to date, and a tool for thinking together.

Growing "knowledge"

Students say that this focused set of activities forces them to come to grips with the subject matter in a detailed way many have never experienced before. "It's like really tearing it apart, and putting it back together again," said one student, whose expression suggested that he saw the assembly and disassembly of the outline as corresponding to an imaginary dissection and rebuilding of the subject matter itself. Indeed, each new outlining activity demands that the class reconsider, compare, reread, and look at component subtopics, parallel topics, and the enfolding super-topic.

The process of examining and revising the outline allows us to hear how others interpreted the phrases we thought were perfectly understandable and accurate—part of the social construction of shared knowledge, described from different perspectives by Barrett (1988, 1989), Barrett & Paradis (1989), and Bruffee (1983, 1984, 1986). Considering the subject from these perspectives, constantly revising our conception to accommodate the others, we emerge with a much more detailed understanding of the subject matter than we had at the start. "I never had to dig into something like this," one student remarked. Another commented, "This structural approach helps me understand a lot more than what I did before, which was, well, sort of soaking stuff up by osmosis."

Students also became much more articulate. One student said with amazement, "Once you understand it, it's easy to write about." Every mature writer urges beginners to "write about what you know," but few say how a beginner can come to know something. Our collaborative outlining offers beginners one way to interrogate the subject thoroughly enough to come to "know" it, or at least, to feel comfortable with many aspects of it. They experience the way "growing understanding" can lead to facility of expression. The students were experiencing an aspect of what Kellogg (1994) refers to when he says, "Writing not only demands thinking; it is also a means of thinking." Other researchers have pointed out that writing about a subject can sharpen one's thinking about it (Bradford, 1983; Horton, 1982; Nickerson, Perkins, &

Smith, 1985;), as in creating legal arguments (Stratman, 1990) and scientific essays (Olsen, 1989, Olson, 1976, Olson & Atkins, 1990). In Bereiter & Scardamalia's (1987) terms, the students were going beyond simply telling what they knew to transform their knowledge through reflective thought.

Of course, there is no magical moment called *understanding*, no final conclusion we can identify as an accurate comprehension of the subject. Instead, we have our emerging interpretation of the subject, one that is very local, having been crafted for a particular audience in a particular context. That interpretation is to some degree reflected in our developing outline. I do not call this interpretation knowledge, either, because I have no certainty that we know very much; but our interpretation has become more internally coherent. It does not have as many black holes, niggling inconsistencies, and areas that make us dizzy. We are more satisfied with it as an interpretation we can present to our ultimate audience.

Students describe a change they observe in our text, too, saying that the outline has become clearer. When I probe, I find they are not thinking that we have somehow "let the subject show through," as my New Critical professors used to urge. That Platonic ideal assumed there was a real subject which could show through, refulgent, and we just had to get out of the way to let that light through. No, in the students' sense, a clear outline simply means that as writers we have considered the matter thoroughly enough to eliminate many of the

verbal attributes that cause readers to scratch their collective heads—duplicate items, trivial items at the top level, key items buried out of sight, related items strewn about with no connection, a large topic treated without any attempt to divide into its components, related topics in a single list not being grouped together, topics at the same level not having any recognizable sequence, and so on. "Clear," then, is a praise word, as Robert Frost said of *poetry*, meaning that you hope the audience will regard your outline (and your document) as clear, but that is for the audience to decide. As an audience, reflecting on our own work, we feel we can see patterns quickly, recognize the reasoning behind the structures, and in repeated tests we find we can proceed without doubt, confusion, or anxiety through the structure, to reach a destination.

Recognizing that any outline is "for now"

Because we revise the outline in so many sessions and in so many different ways, students begin to recognize that an outline does not have to be considered a finished document, a discrete thing, but should be seen as a part of a process, and therefore always "for now." Students say they "could go on forever tinkering with this." In their binders, students may collect half a dozen printouts of the outline at various stages, each with a different time or date in the header; the paper copies are simply a way of preserving our interpretation as it was when we reached one or another convenient breakpoint and sent the

text to the printer. The outline, if they think of it as a document, remains multivoiced, open, as changeable as quicksilver (compare DeKoven, 1998b; Lanham, 1990). Dobrin (1987) points out the downside of this shifting context: "As an outline expands, the meaning of the entries, the relationships among the entries, and the appropriate symbols for the entries all change… headings become subheadings, topics get split up or eliminated, and ideas or facts that we thought were telling become defanged" (pp. 102-103). The fixed becomes fluid; the definite repeatedly loses its grip on our mind. Just as the openness of a text can be externalized (Smith, 1994, p. 280) through hypertext (Balestri, 1988; Johnson-Eilola, 1994; Joyce 1988; Landow, 1992; Landow & Delany, 1993), the temporariness of all developing materials is demonstrated by the very endlessness of our activities, the fact that they seem to go on and on, and we only slow down because the bell rings, or we begin to feel we need to move on. "I never feel as if we have finished," another student said.

Abandoning ownership

Students see that the evolving outline grows out of the whole class, shows traces of all our discussions, and does not belong to any one person. At first, people still show pride of ownership when we turn our attention to one of their phrases. But gradually they let go and even take part in revising text they first contributed. DeKoven (1998a), observing a similar phenomenon, sees three

phases—collecting, connecting, and correcting. "After individual comments are captured ("collect"), the group organizes the individually authored contributions into logical, group-authored categories ("connect"). These categories (level one) are produced by and agreed on and are the property of everyone. The individual contributions (level two) substantiate each category. The outline, collapsed to the first level, reveals the consensus, collectively authored, produced, and owned" (n. p.). I haven't found the process quite as neat as that; in fact, I would argue that at every level, the attachment to one's own words gets loosened. The words do not have signatures attached, and most students say that eventually they cannot recall who said what. In my experience, the evolving document then represents an agreement, or consensus, like that of some experiments in classroom collaborative writing (Daiute, 1986; Goldstein & Malone, 1985), but what strikes participants more strongly is their ability to give up ownership. Some students notice that they no longer even remember which phrases they contributed. This sense of surprised detachment is especially striking when they realize they are looking at something they themselves contributed earlier—without recognizing it as their own. One student laughed out loud at a good joke in one outline, and was surprised to hear that she was the one who had added it in the first place.

The idea that writing is a solitary task, and the corollary that an outline is one person's work, lies deep in our culture. In working together on this evolving

outline, these students discover that they can do verbal work collaboratively, and that this document is a social construction. They begin to recognize that this process resembles what they do when they consult with a peer, late at night, discussing a paper, so they edge toward Rubin's (1988) view that all writing is collaborative because it involves conversations with other people. They do not go as far as Bakhtin in denying individual ownership to every document (Bakhtin, 1981, 1986; Bakhtin & Volosinov, 1986) but they see that "This represents all of us, and it doesn't matter how many words I got into it, or didn't get into it," as one student said. Furthermore, the whole process comes to be considered a large conversation, as Halliday (1978) suggested, "not something that has a beginning and an ending. The exchange of meanings is a continuous process" (p. 136).

In this chapter, we have seen how the evolution from pen and paper to electronic media has brought us a software tool that dramatically shifts attention from the outline as a momentary product to outlining as an ongoing process, in which structural analysis and constructive thinking are played out on the screen, as many previously half-conscious activities become visible, and the group takes advantage of the very presence and changeableness of the emerging outline to watch the collaborative writing unfold.

We have managed, at least for a few hours, to shift the focus from the document to the process, from the individual to the group, and from the primacy of the written to the sheer overwhelming presence—embedded in any written document—of the conversation itself.

This picture of what outlining can help us do seems quite different from the one many of us received in school. To clarify the distinction, I will devote the next two chapters to the old school model of the outline, which has always been implicit in textbooks, but rarely made explicit as a full theory. I am going back in time, to show how heavily the old model was influenced by the medium of paper, and how, once the model became entrenched, it was defended with arguments about logic, practicality, and growth—arguments that despite their creakiness, point to some of the real benefits of outlining.

In the final chapter of the book, I will draw on this contrast between the paper and electronic perspectives, to create a new, overarching model of the activity of outlining. I argue that the new medium, and its software, makes this theoretical model visible, and emphasizes the process aspects over the product, while encouraging us to work together and then notice how—and why—we enjoy collaborating.