

Textual Objects:

Accounting for the Role of Texts in the Everyday Life of Complex Organizations

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ABSTRACT: Texts function as both means and motive for human activity in the same way that other technological objects function: They move from private mediational means to public motive as part of the shifting consciousness that sustains the everyday life of complex organizations. In complex organizations, the status of “text,” the condition of public visibility, is an achievement rather than a given. Seeing texts as objects calls our attention to a range of textual phenomena associated with the advent of information technologies. In infomated environments, the virtual states of textual objects are becoming ever more ubiquitous and consequential. A sample analysis of the texts produced and used in the context of the new technology of personal digital assistants (PDAs) suggests, for example, that such “ITexts” may facilitate the migration of the documentary reality of the workplace into the home.

KEYWORDS: text, organizational communication, IT, PDA, work-life relationships

Texts in Activity Theory

To account for the role that texts play in the everyday life of complex organizations, researchers of writing are turning increasingly toward a body of work arising out of the Soviet psychological tradition — variously called sociohistorical inquiry, cultural psychology, activity theory. Beginning with Vygotsky (1962) and his colleagues Leont'ev (1978) and Luria (1976), and continuing its influence through a Scandinavian connection (Cole and Engeström, 1993), this work has found its way, through the work of Michael Cole (1996) and James Wertsch (1981, 1991), into writing studies, particularly genre theory (Bazerman, 1997; Berkenkotter and Huckin, 1995; Blakeslee, 1997; Russell, 1997; Winsor, 1999).

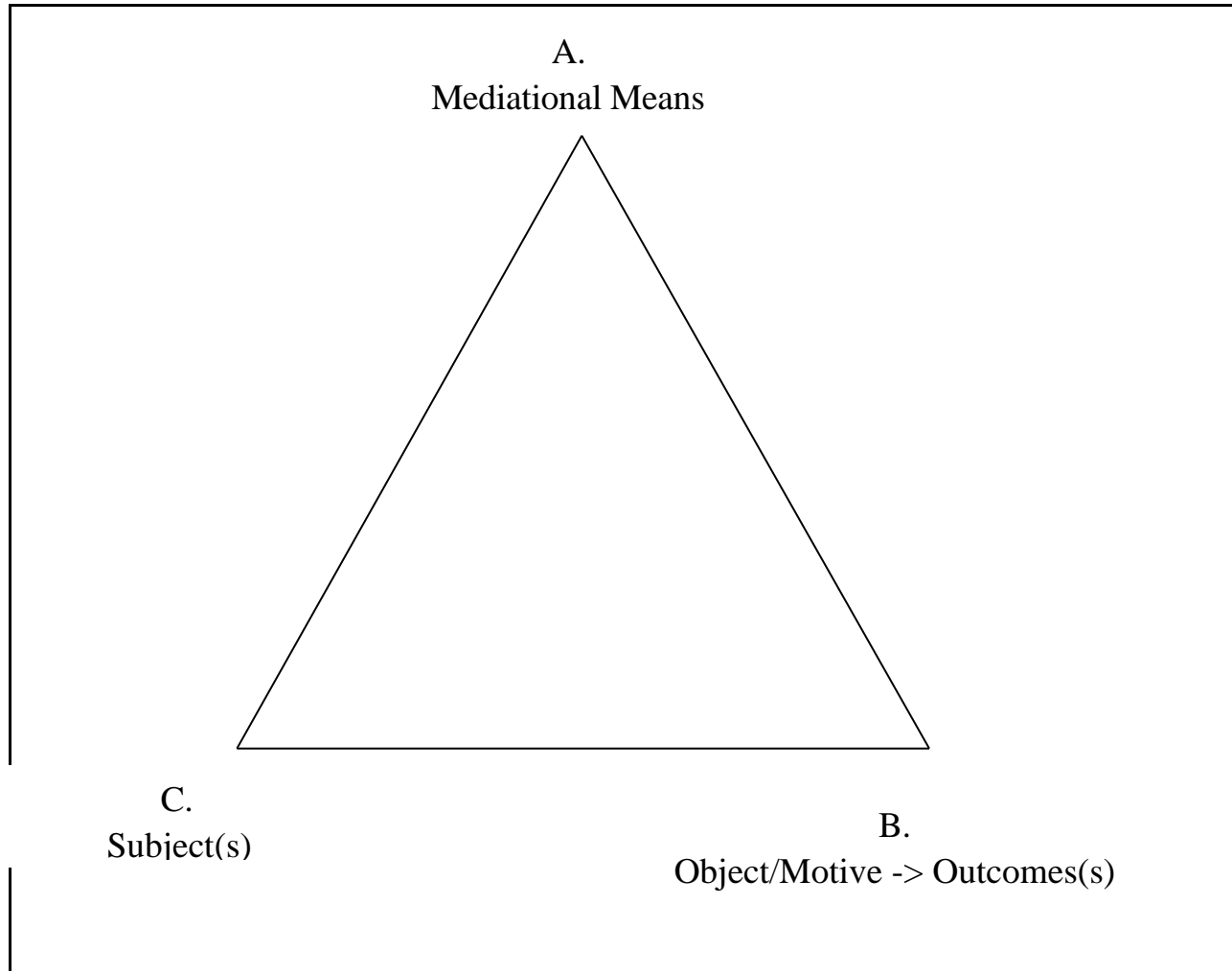


Figure 1: The classic activity triangle, adapted from Russell (1997).

In activity theory, accounts begin with the constructs represented in Figure 1 — Subjects, Mediational Means, and Object/Motives which lead to Outcomes — organized around an activity triangle. Viewed from the perspective of activity theory, written texts have typically been associated with Mediational Means (Russell, 1997; Bazerman, 1994; Dias, et. al., 1999; Miller, 1984). That is, they are viewed as the external artifacts used during the course of an activity, a way of getting things done. In the classic activity triangle shown in Figure 1, then, texts are located at Point A. According to Russell, for example,

a genre is the ongoing use of certain material tools (marks, in the case of written genres) in certain ways that worked once and might work again, a typified tool-

mediated response to conditions recognized by participants as recurring (Russell, 1997, p. 515)

Other definitions of written texts also seem to place texts at Point A in Figure 1, as mediational tools subordinate to the accomplishment of social ends. Russell draws, for example, on Miller's classic essay, "Genre as Social Action," which, as the title suggests, also seems to characterize texts as mediational means. In her formulation, texts serves as the action component in a social system for dealing with recurring exigence. Another formulation of Miller's work, coming out of a Canadian group of genre theorists (Dias, et. al. 1999), claims that genres can be understood as "enactments of recognized social motives" (25), cultural arrangements for taking socially-acknowledged action. Finally, Bazerman's suggestion that texts be analyzed as *genre systems* identifies "the current text to be produced as a speech act in generic form" (Bazerman, 1994, p. 99), speech acts that have stable illocutionary force in directing others' behavior. Putting texts at Point A in Figure 1 — seeing them as mediational means — is thus a well-established position.

Putting texts at Point B may have its merits though. It is true that the social action perspective reviewed above developed in counterpoint to a more formalist definition of text. Definitions of texts which focus on the text itself as the outcome of an activity, it has been feared, will reify the text as object, over normalizing and stabilizing a text's effect. Nevertheless, a definition which focuses on texts as objects might account for those recurring formal features which often identify specific texts as exemplars of one genre or another, a fact which most social-action theories mention but characterize as accidental. More importantly, as I'll elaborate later, it might also provide a better account for the role that texts often play in writers' consciousness, as that driving motive, desirable outcome, around which they organize their work.

The purpose of this article is not, however, to resuscitate a definition of written texts as objects *as opposed to* mediational means, to move all texts, as it were, from Point A to Point B in Figure 1, but rather to suggest how *some* texts do seem to make this move *sometimes*. That is, they occasionally jump the wall, so to speak, from Point A to Point B, becoming recognized as the culturally valued outcome of an activity, not just its mediational means. Our reluctance to treat texts as objects arises, I will suggest, out of an out-dated view of objects, one that takes them as divorced from or predating social use. By placing texts in the context of a full reconsideration of objects, we can see that they have much in common with other objects that serve to both mediate and complete a variety of everyday activities. The rest of this article, then, is aimed at making three interrelated points :

- Texts sometimes move from private mediational means to public motive;
- In this sense, texts act a lot like "objects"; and, finally
- Texts as objects can be understood as part of the shifting consciousness sustaining everyday life in complex organizations.

A decade ago, Witte called for researchers to study "what it means to be able to write and to use texts in contemporary culture" (Witte, 1992, p. 289). This paper is a gesture toward that goal of an accounting for textual mediation in the everyday life of the complex organizations in which we live, first by pulling together a body of recent research that supports and analysis of texts as objects (Bucciarelli, 1994; Cantwell Smith, 1998; Cross, 1993; Geisler, 1994; Henwood; 1995; Honeycutt, 1998; Lewis; 1999; Medway, 1996; Munger, 1997; Winsor, 1999; and Yates, 1993), and then by illustrating with an analysis of texts mediated by the new information technologies.

Texts, Public and Private

One problem with characterizing the role of texts in everyday life simply as mediational means is the resulting tendency to overlook the distinction between private and public texts, a distinction which plays a critical role in complex organizations. Participants in complex organizations routinely create both private and public texts. Just as routinely, they treat them differently — with important organizational consequences. A review of some recent work in writing studies indicates how this happens.

In an important analysis of the writing done on the job by four entry-level employees, Winsor (1999) has given us an example of the way texts placed on public record can allow even low-level employees power to shape the activity systems in which they are embedded. Briefly, by using texts to document the future actions of other — even more senior — members of their organizations, these employees attempted to bring about the actions which they described. The fact that these texts were made public was key to their effectiveness. According to Winsor, “mak[ing] someone’s responsibility public” by naming them in their texts brought pressure “to bear on anyone who failed to do what the writer believed they were supposed to accomplish” (p. 213).

A wide-ranging study by Yates (1993) suggests that this use of public texts to control employees’ behavior in corporations is routine. In fact, many genres of internal communication, like memos and minutes, appear to have evolved as part of the effort of systematic management to sustain managerial control. At the Illinois Central, Du Pont, and Scoville Manufacturing, according to Yates, the number of texts produced for the internal corporate record grew in tandem with the growth of systems through which they were stored and retrieved. Confirming a pattern noted earlier by Smith (1984), “the designed, planned, and organized character of formal organization depends heavily on documentary practices which co-ordinate, order, provide continuity, monitor, and organize relations between different segments and phases of organizational courses of action.” (Smith, 1984, 66) A key characteristic of texts used for internal control, then, is their public character, which makes compliance or failure to comply an observable fact.

Not accidentally, such public texts dominate their authors’ consciousness, becoming identified with the work they do. In Winsor’s study, for example, participants, who were asked to bring to interviews texts they had worked on, almost exclusively brought public texts: the memos they sent; the minutes the distributed; the reports they gave. Unlike mediational means which tend to shift out of consciousness and become embedded in the tacit knowledge of organizational life, these public texts stayed front and center in participants’ consciousness, giving them a strong claim to being phenomena located at Point B in Figure 1, as the objects or motives around which participants organize their work rather than simply the mediational means which enabled its achievement.

Behind each of these public texts, however, were other more private texts that seem classic mediational means in the sense that we would easily locate them at Point A in Figure 1. They are the tools. Though they have consequences, they are not the same kinds of consequences entailed by texts that have gone public. The drafts, the notes, the email correspondence, the doodles — all those “memorial texts” referred to by Witte (1992) — feed into or mediate the production of the public texts, but are often lost to participants’ consciousness. Though private texts have consequences, they are not the same kinds of consequences entailed by texts that writers have published, put name to, and lost control over. I can throw away a draft, forget a database entry, delete notes. No one will know. They are part of the black box that is “me” out of which, every once in a while, a publication pops, seemingly fully formed and kind of miraculous, even to me — who ought to know better.

Winsor’s participants brought their black boxes to her interviews, those texts through

which they put a public face to the world. Their other texts, the private texts, were so ephemeral they may have disappeared by now, an ephemeral nature characteristic in complex organizations. Of the thousands of documents surviving in the corporate archives investigated by Yates, for example, only a few look to be private in the sense defined here. In fact, the only example of circulating drafts she deals with are those circulated through Du Pont's Executive Committee. Standing outside the dominant system of lateral communication — upward to management, or downward to employees — these drafts were circulated horizontally as a way of examining issues and generating consensus about what the corporation should do. In this case, the boundaries of the “individual” appear to have been stretched to enclose the entire Executive Committee and, as a result, the practices of private mediational tools may have also been distributed over a range greater than the solitary individual (see Hutchins, 1995, for an analysis of how this happens more generally).

Although private texts don't often survive to be placed in the archives, they appear to be quite common if you are on the spot and ready to catch them before they hit the trash can. Cross (1993), for example, was there to catch the myriad documents produced and circulated during the development of an executive letter intended for external audiences. According to Cross,

In their format, executive letters of annual reports are short messages, ostensibly from corporate leaders, requiring a unitary point of view. Writer and editors at Auldouest expected the letter to be 'personal [and] subjective.' But in actuality, eight people with different perceptions of audience contributed text to the letter and struggled for empowerment. Yet, less than one-third of the changes made by editors ended up in the final version of the letter. In fact, thirty days into the process, the letter was rewritten 'from scratch' by three different people, and then two of these letters were quickly rejected. (148-149)

Placing their texts on the public record, then, had significant consequences for participants at Auldouest. At stake was the identity and control of the organization itself.

In an activity analysis of this situation, all of the texts which failed to jump the wall to become the final text would certainly be placed at Point A in Figure 1. They were mediational means, helping to delineate issues, identify alternatives, explore possibilities, mediate thinking. Nevertheless, some of these texts failed to achieve the status of public text, failed to move to Point B, and this failure both reflected and created new constellations of organizational power and control.

Texts as Objects

Jumping — or not jumping — from Point A to Point B is a fact laden with consequences for texts and their authors. Texts that jump appear to become part of the public arena, hard facts of organizational life through which authors can control action — or initiate consequences over which they have no control. Failing to jump the wall makes texts no less mediational, no less tools, but often means they drop from participant's consciousness, lost to the record, removed from the archive. This fact, in itself, has been noted before; most recently it has served as the basis for the recovery of women rhetoricians (Lunsford, 1995). In this section, however, I would like to point out how this textual jumping resembles the ways that objects act in everyday life.

As Lewis (1999) details, the activity of engineering design is routinely mediated by texts. Design decisions, made through the rhetorical give-and-take of talk, arise from text and to text. Strong design decisions show different patterns of mediation than weaker design decisions. As the role of texts shift, the temporal shape of the activity shifts; as the temporal shape of the activity shifts; the design object shifts. The sociohistorical triad — history, practice, things — shifts in

synchrony.

With the objects which result from the activity of engineering design— like baby walkers, electric can openers, helicopters — the temptation to take the object as given and fixed is particularly compelling. Over the course of time, we feel, the can opener does not develop; the helicopter remains the helicopter. Studies of the engineering design process show, however, how mutable this design object really is. In a recent paper on architectural design, Medway (1996) has pointed to the mutability of the design objects of architectural design and has suggested the need for writing researchers to acknowledge the existence of “virtual buildings.” The work that Lewis (1998) and others (Bucciarelli, 1994; Geisler and Honeycutt, 1997; Geisler and Lewis, in press) have done on engineering design suggests that we might fruitfully broaden this concept to one of “virtual objects” in general.

According to Medway, virtual objects, unlike real objects, have a history. The concept of the mobility-assistance device that a team of designers has when they begin to work on day 1 is not the same concept they have three days later, two months later, or when the design work is done. As Medway also notes, this mutability is not assigned by designers to a state in the future — what the design object *will be* — but is assigned by the designers to a state in the present — what the design object *is*. The design object always is what it is, but what it is changes from day to day.

In addition to mutability, virtual objects appear to differ from real objects because knowledge about them is unequally available. Real objects appear to be publicly inspectable; knowledge about them to be equally available. A real building either has or does not have a window here, a door there, a facade of stone or a facade of marble. The features of a virtual object, on the other hand, are not so publicly inspectable or universally available: On day 1, does the mobility-assistance device have a motor or doesn't it? Does the facade go this way or doesn't it? Does the helicopter have this lift or doesn't it? During the course of design work, answers to such questions are not readily apparent: answers may not yet exist for a design team as a whole or may exist only for specialists on the team: Joe knows; I don't know. What Joe knows that I don't know is not whether there *will be* a window there, but rather whether there *is* a window there.

When we talk about the virtual objects that exist during the design process, then, we seem to be talking about a very different thing from the real objects which emerge at the end of the design process: one real, fixed, public; the other virtual, mutable, semi-private. Such a distinction helps us to understand that cultural activities like design that are oriented toward the production of objects as their outcome have these objects represented virtually during their processes.

When we come to consider the role of texts in the activity of design, particularly with respect to objects, two peculiarities appear: First, the relationship between texts and objects is far from clear. Second, the distinction between virtual and real objects appears to be less than hard and fast. Let's take each of these in turn. As Medway noticed in architectural design, specific texts — in this case plans with textual notations — always present an incomplete representation of the virtual object. One architect may read out of a set of plans a feature of a design object that a second architect may simply assert is not there. In such cases, the second architect will often be considered the more definitive arbiter of the virtual object than the plan: the plan may be ambiguous, poorly drawn, or simply misread.

As Lewis (1999) notes, texts are almost always present in the activity of engineering design and can, in some ways, be considered the outcome of the design activity. Nothing but texts emerges at the end of the activity although all participants in the activity believe that what emerges from that activity is a design object. The puzzle then is that although texts are not considered complete representations of the object and the object is considered the real product of the design activity, literally nothing but texts emerge from the design activity. What exactly, then, is the relationship between these objects, virtual or real, and these texts?

In other activities which we do not see as leading to design objects that are as concrete as

buildings and helicopters, this kind of question doesn't go away as we might assume. It only gets stickier. If we watch the work of a curriculum committee, for example, we will see a similar pattern of textualization: texts everywhere read from and written during the activity, none taken by any of the participants as the same as the curriculum, the object of their work, but ending, if successful, in what appears to be nothing more than a text: a catalogue description.

Even in what might seem to be the hardest case, the pattern persists: In the activity of constructing a philosophical essay, the activity throughout involves reading from and writing to texts, and the outcome is clearly nothing more than the text that gets published. Yet the participants act as if there has been a virtual object, the argument, of which any specific text can only be a loose representation (Geisler, 1994).

It might be possible to look at the situations I have just described and try to adjudicate: to try to decide what is real and what is virtual. But that is where we get to our second point: the distinction between virtual and real objects does not, upon inspection, appear to be that hard and fast. Let's take a tale documented by Bucciarelli (1994), one not uncommon in engineering design. A team at Solaray worked for months on a product, bringing the virtual object through development from a very amorphous idea associated with next to no text, to a very fully specific design object with pages upon pages of detailed drawings and analysis, and finally to a full scale working prototype undergoing tests in the field. The link between virtual and real objects appeared to be complete. The team was literally ready to go into production. Then the sky fell. Here is how Bucciarelli tells it:

the following Monday, Tom and his colleagues in Systems Engineering received the word: A major decision had been made in that past week by corporate headquarters in New York..... Module production for direct sales were to be cut back to a minimum. All module design tasks were to be terminated. All effort was to go into the design and development of cell processing and production technology. The Systems Engineering and Marketing Group was to be reduced to one person. Tom was to move over to Cell Production; the rest of the group received notice of termination of employment. (185)

This call from corporate has serious consequences for the virtual object: The virtual object, the "what is" for the team, disappears if not in seconds, then in days. The designers no longer talk about what the object is. It no longer *is*. What of that material arrangement of solar cells sitting up on Mrs. Jones' roof in the field test? It no longer *is* either. The prototype is pulled apart, pieces may be used for other projects, other parts eventually thrown away or stored.

Such a story calls into question our easy assumption that objects become real, more than virtual, by being built, by being embodied. Such stories make clear that it takes more than material arrangements to make something into a real object; it takes social arrangements: corporate assent, assembly line production, market forces. Even with something as concrete as a building (pun intended), architects know that embodiment alone does not make an object real: that they may imagine a certain use for a virtual object only to find that once embodied that object does not work for that use or is used for something other than that use.

What all this amounts to saying is something that has become commonplace in the area of technology studies: that an object is a combination of both material and social arrangements, thing plus use. In activity theoretic terms, this means mediational tool plus cultural outcome, Point A plus Point B. Recent work by Brian Cantwell Smith (1998) gives an even more precise description of objects. Objects are not, argues Cantwell Smith, out there, "independently supplied, by God or pre-emptive inscription" (p. 263). Instead, they are achieved by being abstracted, identified through features generalizing across multiple instances. Such abstraction helps us keep our heads above the waters, "insulated from being buffeted by every nuance and vibration" of material reality (p. 241). In this materiality, from moment to moment, according to Cantwell

Smith, patterns shift across regions, creating local densities, but not predefined “things” with clearly demarcated edges (see also Gibson, 1979). In order to stabilize a region as an object, then, we humans must intervene “bodily” (p. 269) to create conditions to insure that when we “come back into connection with it again, at other times and places, and perhaps in other ways,” (241), the object will behave as we predict and expect.

The conditions we create to stabilize objects, continues Cantwell Smith, include not only those we manage through perception and consciousness but also those we create over time through culture. Latour, in the actor-network theory on which, in part, Cantwell Smith builds, gives us a better understanding of the social consequences of an object’s being “registered” through the intervention of humans and their cultures. Objects, according to Latour, are the outcomes of technologies through which human translate or delegate work from human to non-human (see Latour, 1995, for a concise introduction). Each object, then, is both an inscription of human activity originally “upstream” from the object and a prescription on activity further “downstream” from the object. All technologies (and their objects) are thus anthropomorphic in three senses: made by human action, substituting for human action, and shaping human action.

For Latour and other theorists of technology (Smith, 1984), one technological object which has obviously dominated the everyday life of complex organizations is the text. The parallels between text and object are compelling (see a related argument by Kaufer and Butler, 2000). Like Latour’s objects, the texts observed by Winsor, Yates, Cross, and others, are both inscriptions of upstream activity in complex organizations and prescriptions on downstream activity. Like the virtual objects described by Medway, texts have both “real” and “virtual” states, being treated by authors as mutable and incomplete representations of “what they mean to say” while in process, but being reified as definitive and compelling once completed and made public. And, like the objects analyzed by Cantwell Smith, textual objects and the genres systems out of which they emerge — are not “independently supplied, by God or pre-emptive inscription” but are rather created by the bodily intervention of their authors who struggle to carve out rhetorical exigence and appropriate response in the flux and slop of material (and social) reality. And, finally, like the disappearing object described by Bucciarelli, texts which jump the wall into the public domain become part of the hard facts of social existence while those which don’t jump, remain private, sink from conscious awareness, and often disappear from the cultural record.

Texts in Complex Organizations

Seeing the parallel between texts and objects, both virtual and the real, and how they interact in contexts of production and use has implications for our understanding of the role of texts in the everyday life of complex organizations. Instead of putting some texts at Point A as part of the activity and some texts at Point B as the valued outcome of that activity, we need to ask by what social arrangements some texts remain the mundane texts which virtually disappear at the completion of an activity and other texts jump the wall to become the public texts which are taken to constitute the valued outcome of that activity. Just as something seems to need to happen to a virtual design object to make it “jump the wall” into reality, so too something needs to happen to mundane texts for them to “jump the wall” to become real or valorized texts. Of the many sketches that may be made of the baby walker, for example, only some will find their way into the final design report. Of the many comments made in peer response, only some will make their way into a final draft.

What does it take for a text to move from being part of invisible marginalia and useless paper to being part of the “text” that constitutes, in part or in whole, the valued object for an activity, the reason for it being done at all? Activity theory gives us the beginnings of an answer when it recognizes that whether a set of actions constitute an “activity” or not depends upon whether what is produced as a result of those actions is understood by the participants themselves

as a culturally-valued and consciously-produced object or is considered by them as just part of the incidental scratch-work produced in the course of making some other culturally-valued product. In other words, whether something remains at Point A or jumps to Point B depends upon what the participants in an activity see themselves as doing, what participants themselves take to be the “why” in the question, “why are you doing this?”

Whether a text is visible or invisible, then, depends upon its status and the status of its associated work in the public realm. This status can vary over the course of both individual and institutional histories. In the peer response situations studied by Honeycutt (1998), for example, students may consider the response text itself to be the culturally valued product of their activity while practitioners more experienced with the activity of revision might keep their eyes more firmly focused on the text to be revised. In electronic contexts, participants may tend to lose consciousness of the email texts they write, considering them just tools to an end — and be quite surprised to find them subpoenaed as evidence in a court case (Nocera, 1999). History, then, either at the individual level or at the institutional level, plays a role in making a text visible or invisible, forcing it into the public realm, into consciousness, or moving it into subsidiary awareness as a tool. But, as I’ll try to indicate in the rest of this section, more than individual history is at work in the process by which texts move in and out of the consciousness in complex organizations.

Left to their own devices, individual development and technological development both work to force currently-conscious activities into subsidiary awareness (Polanyi, 1958/1962), making room for the kind of gains in complexity and productivity that advocates for technological change routinely promise (Norman, 1993; Kaptelinin, 1997). Under this kind of pressure, we might expect in the “best” of all possible worlds — a world of experts, complex tools, and increasingly effective technologies — that more and more of what used to be visible and conscious become invisible and unconscious.

The push-back against this pressure toward invisibility comes, however, in the nature of complex organizations. If we look at organizations as single entities — the nation, the corporation, the assembly line — we can easily believe that as single entities, they can engage in a single overall activity or mission if the actions of the individual members can move into subsidiary awareness. According to Henwood (1995), for example, the Daughters of Charity, with their long history, consistent education, and cohesive life, have created for themselves a unified view of their Core Values of Respect, Simplicity, Advocacy for the Poor, and Inventiveness to Infinity.

The metaphors of the complex organization as the well-organized machine or as the biological organism have held appeal for management theorists because they promised to deliver well-orchestrated and coordinated action out of the collective work of a multitude of human beings. Taylorism, the scientific management method developed by Frederick Winslow Taylor, was built upon this dream and has dominated American life for most of this century (Kanigel, 1999; Waring, 1991). But, ironically, its success was dependent upon the recognition that the coordination of work in complex organization could not be accomplished by the relying upon the kind of tacit coordination which keeps machines and organisms running. People could not be relied upon to contribute to the whole, for example, in the way that a muscle might contribute to an organism’s running.

Some mechanism was thus needed to insure public accountability, to insure that each set of actions undertaken by individuals or subgroups within the organization contributed on-time and appropriately. The push-back against greater and greater automation, privatization, and technologization was, then, the need to observe, to survey, and to manage — all, most often, through textual genres that were made the publicly acknowledged, culturally-valued outcome of participants’ activities, rather than simply their mediational means (Yates, 1989). The creation and evaluation of these texts — committee reports, design reports, architectural plans, philosophical essays, rules and procedures — aimed to wrest control of the tacit knowledge of how things

worked from private individuals and distribute this knowledge in a public form across the organization, thereby insuring its survival .

In complex organizations, then, the status of “text,” the condition of visibility, is not something that we as writing researchers and scholars should taken as a given. We need to ask, Why is one text private, accepted as being tied to local conditions, part of the mediational means, and not expected to be interpretable outside of those conditions? Why is another text seen as public, more universally understandable, something which is produced and shipped out of its local context and used, as a kind of black box, in other contexts for other purposes? Two examples from recent research suggest the kind of phenomena these questions may uncover.

The textualization of previously tacit knowledge, the making public of what was previous private, appears to be one of the hallmarks of complex organizations. The Daughters of Charity, for example, moved to articulate the Core Values mentioned earlier and publish them in texts — posted on everything from menus to elevator walls. This textualization was an effort to insure that Charity Hospital remained true to the Daughters’ mission, even in the face of the precipitously declining numbers that made the Daughters’ material presence increasingly hard to maintain. As Henwood (1995) indicates, however, the Daughters did not put a great deal of their tacit understanding of their Core Values into the texts they distributed. As a result, their lay employees were able to create significantly different interpretations— interpretations more germane to their experience and needs — even as they pledged allegiance to the Core Values. Functioning like the boundary objects Henderson tracked in engineering design (Henderson, 1991), then, the Daughters’ texts became multiply-interpretable conscription devices for Charity Hospital’s mission.

Just as the move to make tacit knowledge public through text can be interesting, so too can the reverse: when one group attempts to de-textualize another. In New York State in 1985, for example, the emergency medical technicians studied by Munger (1997) saw their county-developed Pre-Hospital Care Reports replaced with a state-wide form which significantly reduced the white space they had for writing. This reduction of text reflected the belief of emergency medical physicians — who were just then organizing nationally — that the technicians now being brought under their supervision after a decade of independence needed guidance through proper procedure. They certainly did not need to engage in interpretive practices concerning the patient’s condition, a job the physicians felt was best left to themselves.

Beset by complaints that the check boxes and human body diagram they put into the PCR v1 did not support the “interpretive thinking” EMTs were taught to do, the State Department of Health moved within two years to restore the EMTs white space in a new PCRv2. In this situation, then, competing affiliated professions (Geisler, Rogers, and Haller, 1998), emergency medical technicians and emergency medical physicians, struggled over whether or not one profession’s mediational tools should be included as part of the public record in the emergency medical system as a whole. Interestingly, though the EMTs in New York State appear to have carried the day concerning this point with the revision of the PCR v2, run reports today, though part of the public record, go unread by physicians and nurses in the emergency rooms observed by Munger and are not even available for review to the technicians who write them. While technically public, then, the system severely constrains their public uses.

Texts Mediated by Information Technology

Viewing texts as objects helps us to understand texts as a part, albeit an important part, of the pattern of culture we have made through objects and through object-making. Viewing texts as objects does not ask us to believe texts to be any more or less “real” than we believe can openers to be real. Viewing texts as objects only asks that we understand the process through which such

reality is constructed, through which the everyday life of complex organizations are sustained. Perhaps most importantly, viewing texts as objects calls our attention to a range of textual phenomena that has been all but neglected in writing research.

With the advent of information technologies with texts at their core—the blend of IT and texts known as “ITexts” (Geisler, et. al., 2001), the virtual states of textual objects are becoming ever more ubiquitous and consequential. While a full-blown study of any one of these ITexts is yet to be done, the rest of this article will present a partial analysis of a work session mediated by information technologies. These data are presented with no claims for representativeness, but only explored here to illustrate some of the theoretical issues raised in the first half of this article.

The Data

The participant was myself, an academic profession at the rank of professor, a woman in her mid 40s with a husband and two children, currently on sabbatical and working from home. The 97-minute session constituted the first work of the day on a Monday. Domestically, the day was somewhat unusual: the threat of an impending snow storm had closed the schools and kept my two children, ages 6 and 12, at home. Professionally, the day was a typical one devoted to primarily scholarly activities.

The data were collected using screen-capture technology set at 1 frame per second combined with full access to the participant’s data files, notes recorded during the session concerning major “off-line” activities, and an extensive post-session retrospective viewing and note-making.

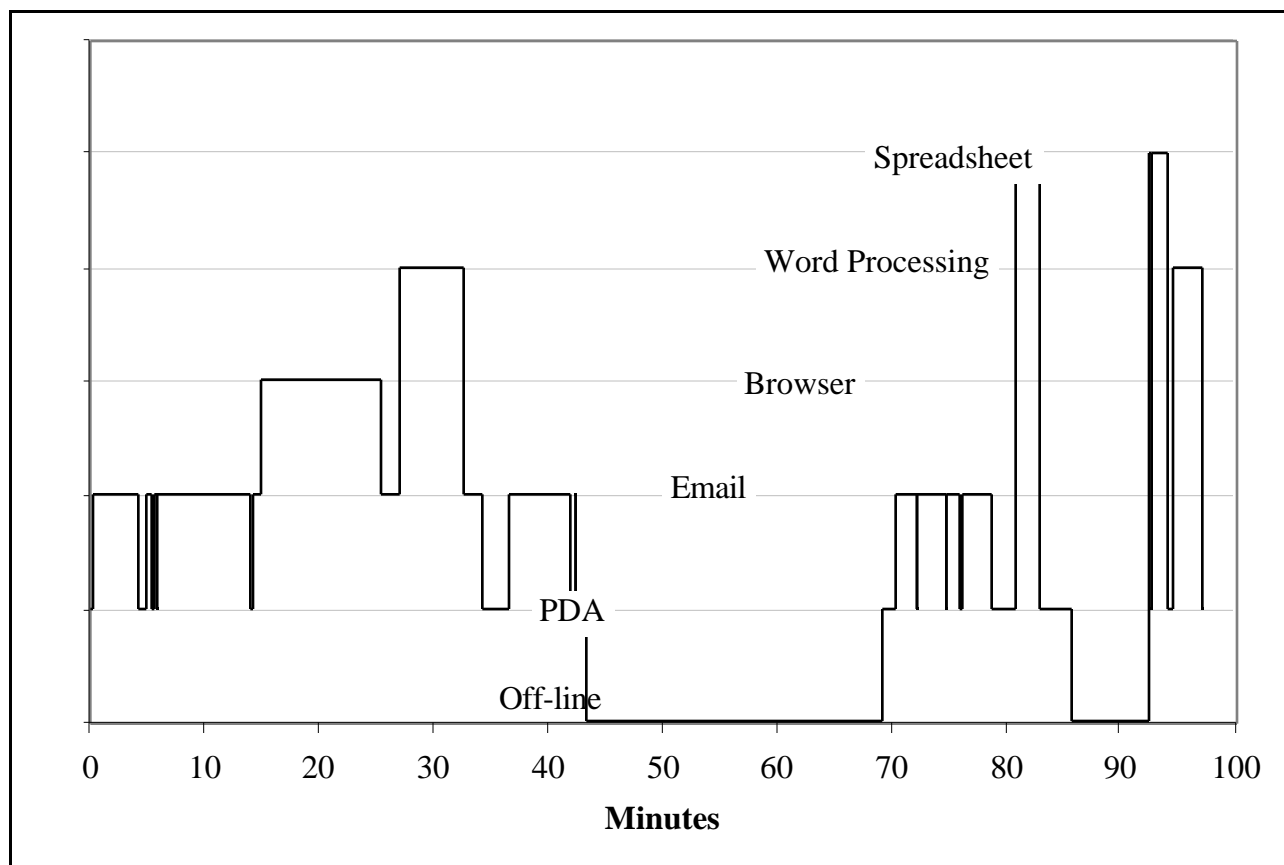


Figure 2: Application use over 140-minute session.

Analysis

The screen-capture movie was broken down into 272 work segments, most ranging from .02 minutes (about 1 second) to just under 2.5 minutes, with considerably longer segments that involved reading web texts (2.4 and 3.9 minutes), editing a letter of recommendation (4.7 minutes), talking to my daughter (6.9 minutes), and taking a break to get dressed (26 minutes).

These segments were mediated by five computer applications as shown in Figure 2 as well as 33 minutes of doing things “off-line” and away from the computer. Most of the on-line time was spent in email (31 minutes), with some time spent in a browser (10 minutes), about the same amount of time spent in the desktop application for a handheld personal digital assistant or PDA (12 minutes), and lesser amounts of time spent in word processing (8 minutes) and a spreadsheet (3 minutes). The session basically moved from my doing the day’s email through working out a work agenda for the week.

For the purposes of this analysis, I defined a “text” as a string of words viewed and/or edited as an entity within its own window at some time during the session. Texts thus varied considerably in size depending, to some extent upon the application: word processing texts could be very long; email texts, moderately long; PDA texts, relatively short. Texts could also be embedded in other texts: the banner text “Ed out of town” (Text # 19), for example, though created and edited in its own window (see Figure 4), could later be viewed as part of a daily or weekly calendar display such (as shown in Figures 3 and 5).

Ubiquitous Texts

The first point to be made about this session is that texts were ubiquitous. A total of 59.3 minutes were mediated by texts of some kind — 92.4% of the time I spent on-line, 61.1% of the entire session. During this on-line work, I used 90 distinct texts a total of 152 times. As Table 1 indicates, however, the pattern of use varied by application. Although on average, I spent only .4 minutes with a text each time, I tended to spend relatively longer periods with texts I was writing in word processing (1.1 minute per text) and with texts I was reading in a browser (5.1 minutes) and relatively short periods of time with texts in email (.5 minutes), spreadsheet (.3 minutes), and PDA (.2 minutes).

Application	No. Distinct Texts	No. Times Used	Average No. of Times Used	Average Duration of Use (minutes)	No. (%) Private
Email	41	66	1.6	.5	2 (5%)
PDA	32	67	2.1	.2	32 (100%)
Browser	2	2	1.0	5.1	0 (0%)
WP	7	7	1.0	1.1	0 (0%)
SS	8	10	.8	.3	8 (100%)
Total	90	152	1.7	.4	42 (47%)

Table 1: Text Use by Application.

Duration appeared to be closely related to audience and purpose: With the exception of texts in email, texts with which I spent relatively short periods of time were generally private, ones I had written for myself as audience, in the PDA application (100% private) and in the spreadsheet application (also 100% private). Texts with which I spent longer periods of time tended to be written for others: word processing (0% private) and the browser (also 0% private). Email, with which I spent relatively little time per text, was generally not private (5% private).

Private Texts

Private texts, texts written for myself, were both common and consequential in this session. Of the 90 distinct texts I used, nearly half of them were the kinds of private texts described earlier. That is, I regarded as a means rather than a motive for my work. They were, thus, the kind of texts not likely to jump the wall from A to B, the kind least likely to survive in the archives, and the kind least likely to be studied by writing researchers.

Yet these texts were highly consequential. One early sequence illustrates how I used the texts mediated by the PDA calendar application in tandem with email. The sequence was initiated by an email from a colleague about changes in his availability for meetings as well as information about an upcoming visit we were hosting:

Hi, I have come up with another schedule constraint: I must be away Feb. 28 & Mar.1. I'll be back in NY late tomorrow (Sat.). There will be 8 people arriving from St Michaels Friday. [Text #11]

Since I was responsible for keeping track of the team's whereabouts, I acted on my colleagues' email with the following sequence:

- [4: 32] activated the PDA desktop application, starting with the current Monday (see Figure 3),
- [4:35-4:37] paged through three successive Monday's (Feb 12, 19, and 26),
- [4:38-4:41] moved through the week (Feb 27) to find the two days mentioned by my colleague (Feb 28 and Mar 1), and
- [4:47-5:09] wrote a new text, "Ed out of town" (Text # 19) as an event banner (See Figure 4) with two attributes: a date of February 28 and a duration of 2 days.

In the course of a little over 30 seconds, then, I had read one text (email), paged through six other texts (daily calendars), and written one text (an event banner).

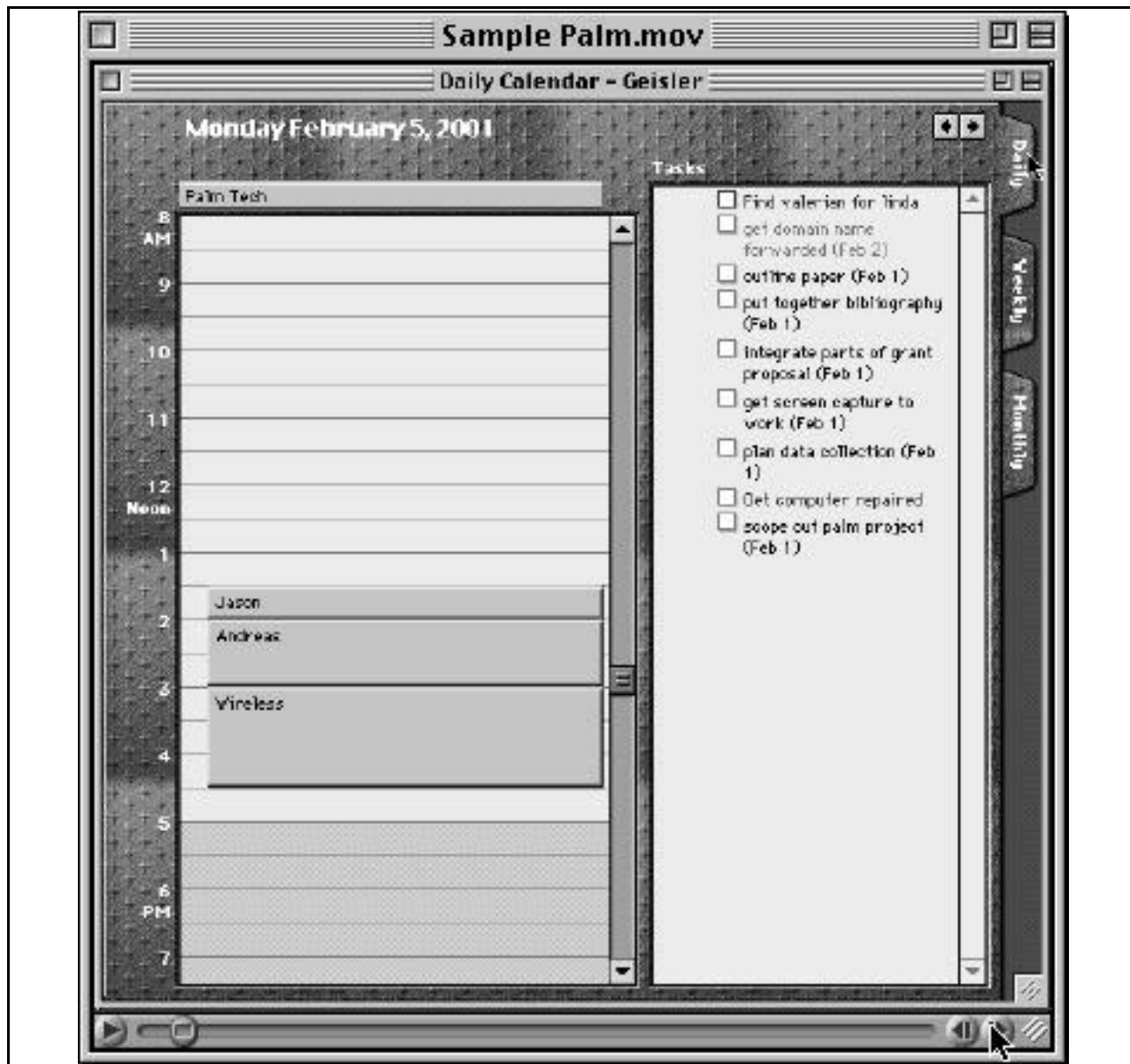


Figure 3: Text # 1 at 4:33: Current Monday, February 5, 2001.

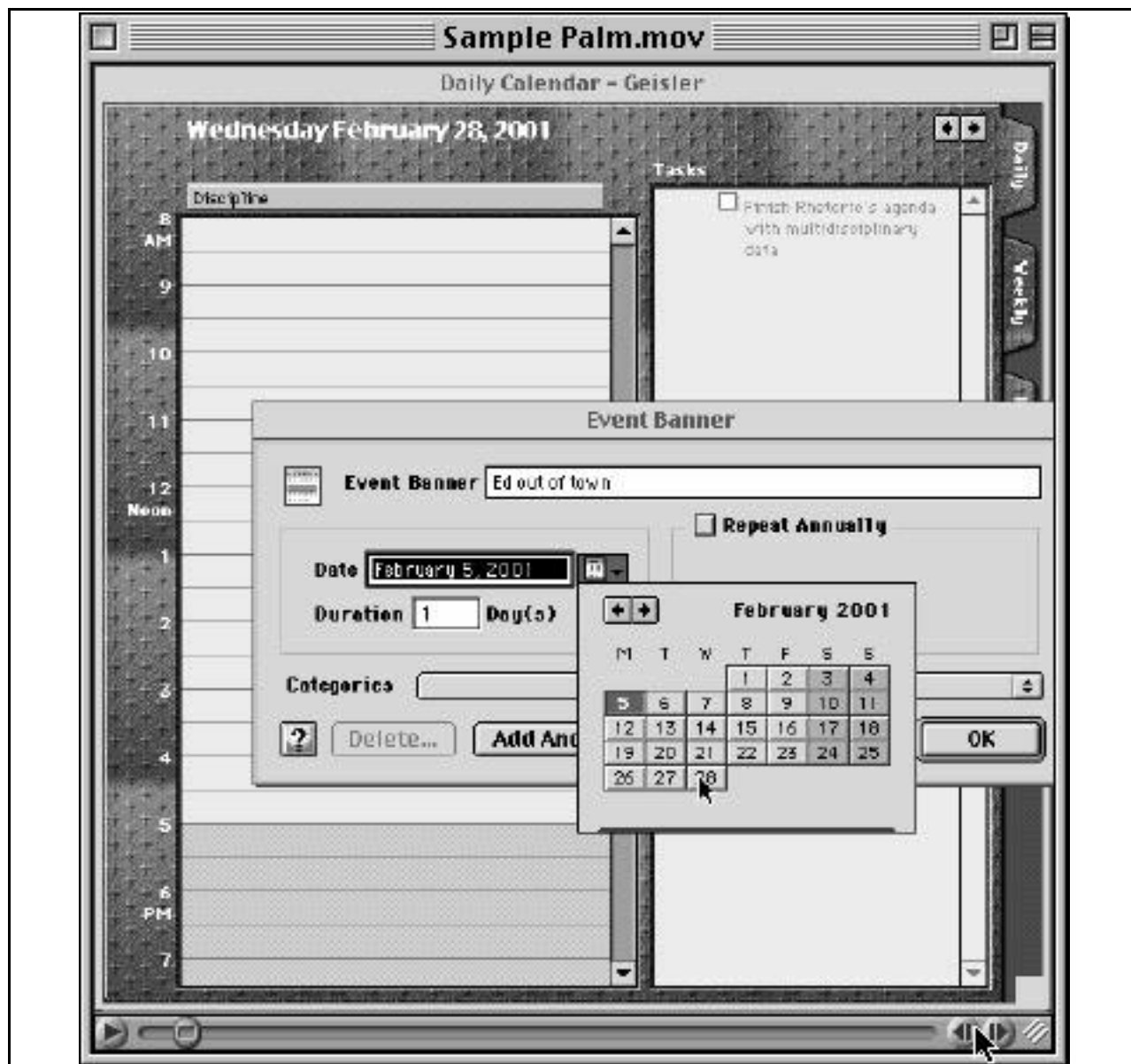


Figure 4: Text #19 at 4:56: Event banner, “Ed out of town”.

If interactions with these private texts amounted to no more than interpreting and recording messages sent by others, they might be only mildly interesting. The sequence initiated by Text #11 did not end with the creation the event banner #19, however. Returning to the email text to reply, I acknowledged the first piece information about meeting availability, but then went on to deal with the second piece of information about the upcoming visit:

I'll keep that on my list. I assume we're meeting with St. Michael's at [Text #20]

Not remembering when the visit is scheduled for, I returned to the PDA application, moved back to the Current Monday (Text #1 shown in Figure 3) and then switched to the weekly calendar view (Text #21 shown in Figure 5) which showed that the event, “Possible St. Michael’s visit” (Text #22), started at 11:00 on Friday, Feb 9. I returned to add this piece of information to my email:

11:00? [Text #20]



Figure 5: Text #21 at 5:47: Weekly calendar for week of Feb 5.

Next, thinking of another meeting we had scheduled to prepare for this visit and not wanting to go into the university unnecessarily, I returned to the weekly calendar, deleted the appointment [Text #23], and then returned to Text #20 to add:

I would rather not come in on Thursday to prepare -- should we be meeting a bit in advance, or just wing it? I don't think we need to meet about anything else. [Text #20]

Thinking I had finished this email, I saved Text #20 to the list of outgoing emails waiting to be sent and moved to archive my colleague's original email [Text #11] in a mail folder that already existed for this project. For me, this move typically marks the end of one email-induced sequence of activity and automatically initiates another sequence as the email application automatically opens the next email in my In Box. Today, however, I was not finished with Text #20. A second email from my colleague, sent a day later and opened by me 9.5 minutes later, announced:

Hi, I'm back in town.... I have to add to my out-of-town schedule Feb. 28 and March 1 St Michaels is sending 8 people on Friday. Currently they figure to arrive about 10:30 am. [Text #37]

Realizing that this text contained new information about the time for the meeting on Friday, I took two actions: returned to edit the time for Text #22 (“Possible St. Michaels visit”), changing it from 11:00 to 10:30, and edited my earlier email (Text #20, “I’ll keep that on my list. I assume we’re meeting with St. Michael’s at 11:00?....”) to delete the question about the start time for the meeting.

Layered Texts

Analyzed in such detail, this entirely mundane sequence suggests how, bit by bit, these private texts were constructed by a process of layering. “Ed out of town” was layered with attributes for date and duration. In turn, “Ed out of town” was layered onto the daily calendar texts for Feb 28 and Mar 1. In general, the PDA texts were constructed in layers much like we might construct a pot, for example, by applying layers of clay, feature by feature being added or edited. Going beyond interpreting and recording upstream constraints imposed by others through email, I was actively intervening to construct layered texts that distributed my projected activities over the time and space of the coming week in the best ways I could best imagine.

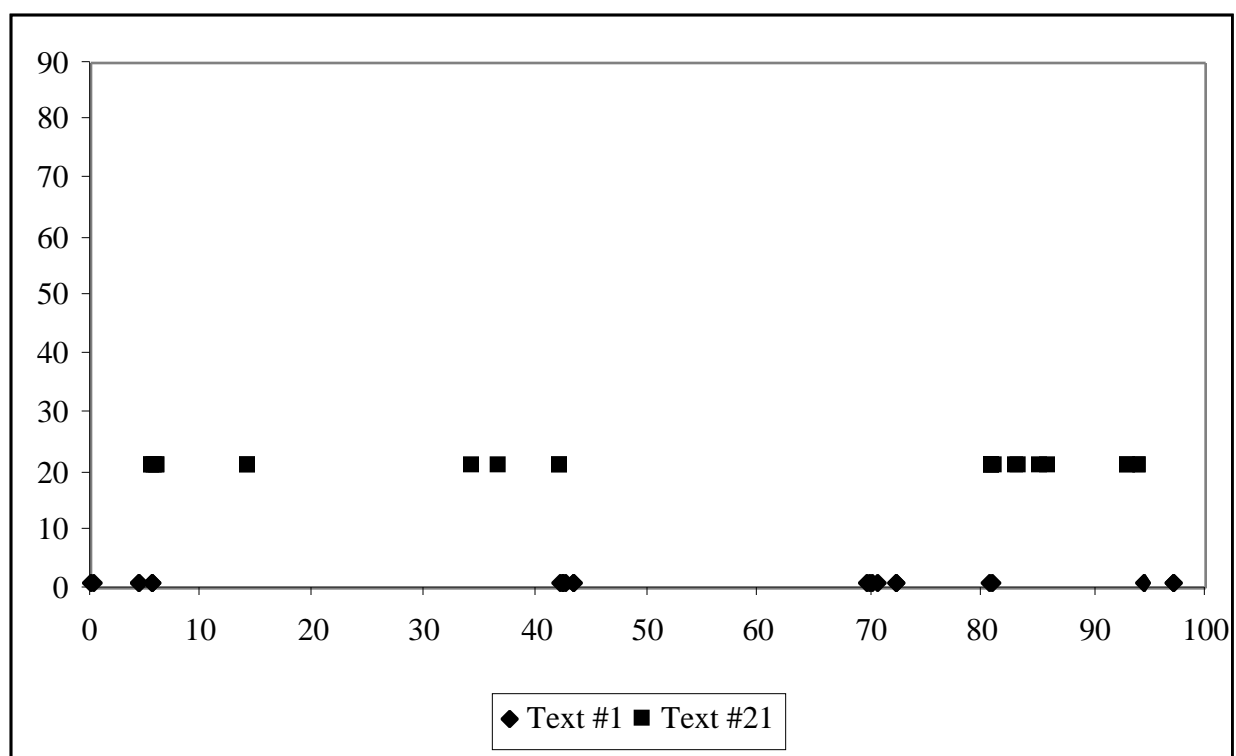


Figure 6: Distribution of Recurrent Texts #1 and #21 over the session.

These private PDA texts also appeared to operate quite differently than the more public texts I wrote for others. For one thing, they appeared to anchor my work across a broad array of applications; I returned to them over and over again throughout the session. Figure 6, shows, for example, how Text #1 (Current Monday) and Text #21 (Current Week) appeared repeatedly throughout the 97 minute session. The layered construction of these texts may have afforded an integrated representation of my activities over time and space that I could then use as a basis for

interacting with others and with myself, across the full range of domains with which I concerned myself: writing a paper in one project, having a meeting on a second project, hosting a visit for a third project, writing a letter of recommendation, and so on.

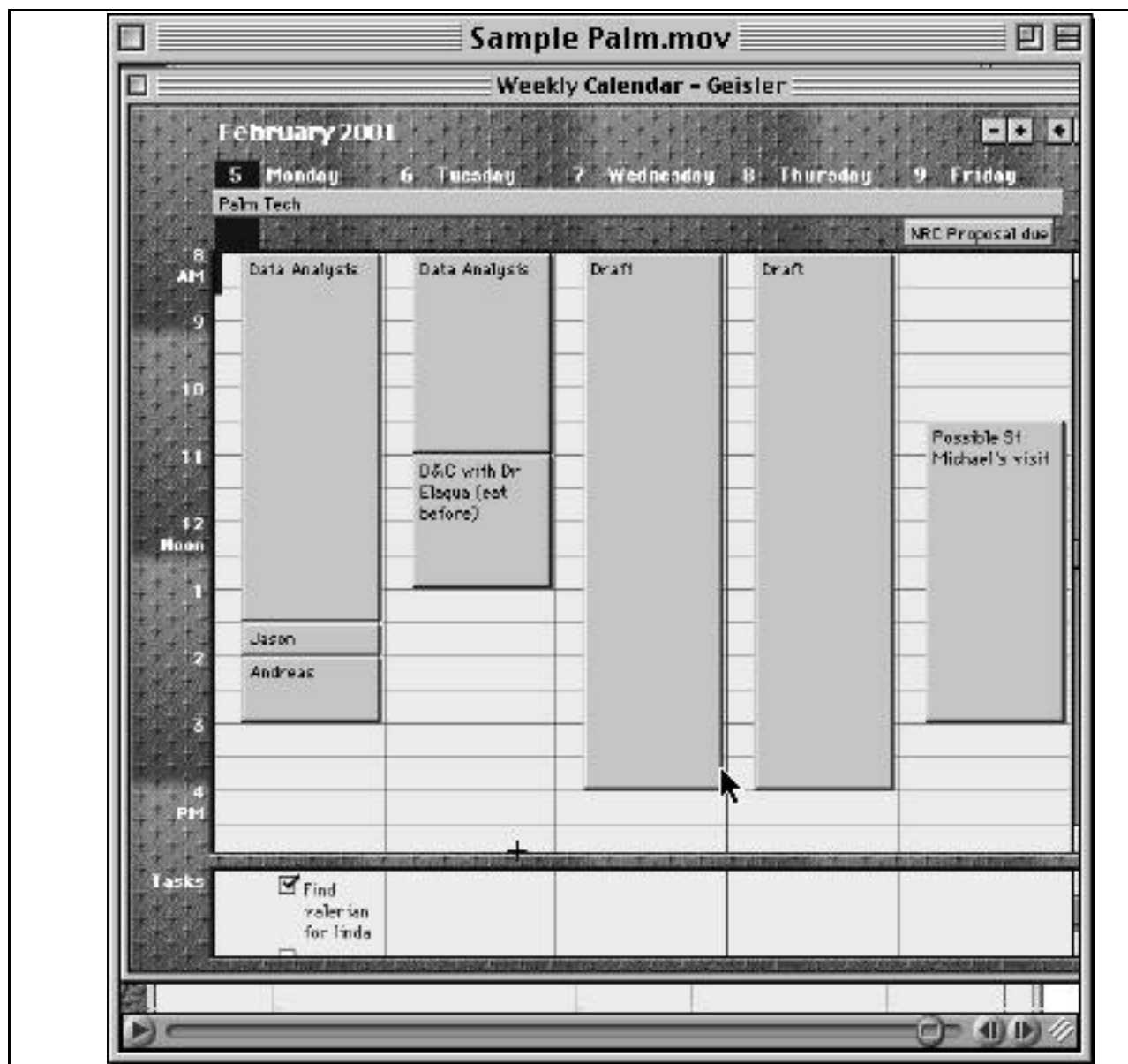


Figure 7: Text #21 at 1:34:07: Weekly calendar for week of Feb 5 showing “appointments with myself,” Texts #79 and #80 (“Data Analysis” on Feb 5 and 6 respectively) and Texts #81 and #82 (“Drafting” on Feb 7 and 8 respectively).

The fact that these PDA texts afforded such an integrated representation was the result, as Cantwell Smith claimed, of acts of perception and consciousness at the level of the individual as well as of the culture as a whole. Some of the actions which I took were the results of upstream constraints built into the tools I was using. Banner texts, for example, have the attribute of “duration” which allowed me to specify that Text #19, “Ed out of town,” should appear for two

days running. This feature, in turn, relates to socio-historical arrangements that makes recurrent meetings a daily fact of life for many. By contrast, the technology of paper-based calendars does not afford such an attribute, making it more cumbersome to “write” recurring appointments and event banners.

Other actions that Monday seem to be less directly afforded by the socio-technical arrangements built into tools and more related to individual acts of perception and consciousness. I used the PDA application, for example, to carve out “appointments with myself” from my so-called “free time,” following years of struggle to insure that long-term projects got attended to. As shown in Figure 7, Text #21, the weekly calendar for the week of Feb 5, was annotated to include two such appointments with myself: data analysis [Texts #79 and #80 on Feb 5 and 6 respectively] and drafting [Texts #81 and #82 on Feb 7 and 8 respectively].

Texts and Socio-Technical Systems

The PDA texts described by this analysis present a novel phenomenon for writing research: they exhibit the layered construction suggestive of texts designed for public use yet they are extremely private. If the analysis presented in the first half of this article is correct, however, textual objects require a kind of public status that these very private PDA texts shouldn't have. How can this be? The key to understanding how these very private texts exhibit the features of objectification lies in understanding where these texts stand in relationship to the context of socio-technical systems more generally.

PDA texts like the ones I was using in my Monday session are relatively recent phenomena though they build on a broad based of paper-based and electronic-based antecedent technologies like the Rolodex and the hand-held calculator (Geisler, in press). The PDA, in particular, is one of a class of so-called mobile technologies that appear to be on the forefront of a wide-scale transformation of the boundary between work and home, in the process rearranging identities as well as the boundaries between public and private in interesting ways.

One of the major social developments of the late 20th century has been the disruption of the tenuous balance between spheres of work and home (Cowan, 1983; Hochschild, 1997; Davidson, 1998). According to the doctrine of the separation of spheres articulated a century ago, work and home were to be kept distinct. Work was the place to which workers, predominantly male, went to earn a wage each morning; home was the place of refuge to which they returned each night. Barriers of both space and time made the boundary between these separate spheres seem “natural.” Crossing them required a movement through space — from home to workplace— and a movement through time — from morning through working day to evening.

In the new American ideal, however, the integrated worker seamlessly moves between the spheres of home and work supported by a growing array of mobile technologies. Paid work at home, sustained by innovations in information technology, breaks down both spatial and temporal boundaries (Sullivan, 2000). “People are always working now, and the lines between worktime and playtime are blurring,” reports Briody (1999) from Comdex99.

PDAs are ideally adapted to moving between work and home. Tucked in a pocket or bag, these technologies move across the border between work and home, challenging the separation of the spheres. In fact, PDAs appear to be the leading edge of a whole host of mobile technologies breaking down spatial and temporal borders between work and life. As we have seen in the Monday work session, they create personal information systems, providing core functionality directly related to the distribution of activity over space and time. Calendars, Phone lists, To Do lists, and Note pads are designed to encourage users to distribute goal-related tasks across the hours of a day and through the days of a week, month, and year.

Hitch-hiking along with the PDA hardware and software is the socio-technical system of

time management. Recent reports on the culture of Silicon Valley describe how time management has become foundational to the formal plans which undergird family life in the highly-technologized families that live there (Darrah, et. al., 2000; Darrah, English-Lueck & Saveri, 1997; English-Lueck, 1998). Planning and coordination mediated by their attendant technologies are the premier strategy used by these families to manage work-life arrangements, backed up by an infrastructure of mobile devices.

English-Lueck and her colleagues suggest that such technologies support the blurring of boundaries between work and life by enabling a “chunking and recombining” of activities in ever smaller bits, recombined in ever more inventive orders (Darrah, et. al., 2000). In a neat reversal, participants see themselves as “doing family” using managerial strategies and technologies developed at work to manage an increasingly complex home life (Darrah, et. al., 2000). Households revolve around work, both paid work and “working on one’s family.” (English-Lueck, 1998).

As Hochschild (1997) suggests, such border crossing practices bring with them a whole host of assumptions about time traditionally associated with the Taylorized workplace or scientific management more generally (Waring, 1991). In her study contrasting working and non-working mothers, Deem (1986) suggests that there are fundamentally different perspectives on time between work and the traditional home. At work, time comes in well-defined blocks with compartmentalized activities. In the traditional home, time has been more fragmented, made up of a multitude of overlapping and minor activities interspersed with unpredictable times for leisure. Now home time becoming increasingly managed according to workplace norms using workplace technologies.

The objectification of private texts described in the analysis of my Monday work session may be related to the migration of time management systems from the public venues of the work place into more traditionally private domains. Just as texts in the workplace became, in the later half of the 19th century, the means to make work accountable and visible to upper level management (Yates, 1993), at the opening of the 21st century, we may be seeing this textual accountability move, via mobile technologies like the PDA, into more private space to support “self-management.” The ever finer chunking of time and space first described by English-Lueck and her colleagues may be sustained by the creation of myriad textual objects like Text #22 (“Possible St. Michaels visit”). Such texts, though quite different from the discursive usually studied by writing research, nevertheless, are kin to the rules, regulations, and signage through which the 19th century workplace was regularized and managed.

Conclusion

Complex organizations are complex. They don’t spring up with rules and structures invented over days or weeks, with technologies designed for this moment only. Instead, as this article suggests, texts — as a specific kind of technology — are embedded in the history of a culture’s activities in ways that enable the coordination of complexities that, on the one hand, could not have been imagined, understood, or planned for, but which should not, on the other hand, be seen as inevitable or natural. Although the evidence for the routine nature of texts is compelling (Brandt, 1990; Geisler, 1994; Nystrand, 1989; Prior, 1998), I have tried to indicate how an examination of texts as objects can begin to uncover the patterns Witte referred to as “what it means to be able to write and to use texts in contemporary culture” (Witte, 1992, p. 289).

The public-private divide is a moved, movable, and often moving boundary. When a text is private, unacknowledged, we need to ask: what is being gained here by having this work invisible? When a text is public, valorized, we need to ask: what is being coordinated here by having this work so accountable? When a text that has traditionally been private takes on features

of objectification, we need to ask: what is being accomplished by shifting the border between public and private work? Whether a given text is on one side, understood as mediational tools, ephemeral dress, or, on the other side, the valued outcome, made for the archives probably has been changed, can be changed, and may, again, be changing under the social transformation mediated by information technologies. Understanding such change is, I hope, the proper role for the reflective practitioner of writing research.

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