# AN ABSTRACT OF THE THESIS OF

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Standard accounts of women's relationship with technology stress women's need to overcome anxiety to achieve competence with computers. Recent studies provide evidence that this woman-anxiety-technology connection is an oversimplification of the relationship between women and computers. New literature also suggests that making computers more appealing will help girls overcome computational reticence. However, women and girls still are viewed as technologically deficient. Current and proposed educational strategies focus on helping girls "master" computers in order to compete in the classroom and workplace. In the following study, interviews with five women who grew up without computers suggest that, as these women adapted to this new technology in their lives, the drive for mastery did not accurately describe their evolving relationship with computers. Instead, a move toward integration emerged in the patterns of their experiences. After a technological imperative brought the computer into these five women's lives, each woman struggled to find equilibrium by making appropriate choices while negotiating her relationship with the machine. Contextually based learning experiences with coaches or mentors also served as catalysts toward integrating the computer into everyday life rather than simply mastering it as a tool. When the women in this study befriended the computer in this way, the ends and means of computing became one. Thus, this study suggests a new way to examine human relationships with computers—through the lens of virtue ethics.

Virtual Virtuosos: Cyborgs and Integrative Ethics in the Intimate Machine

by

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I understand that my thesis will become part of the permanent collections of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

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Ronda L. Clemenhagen, Author

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# Dedication

To my parents, Y'Vonne and Buddy, for being proud of me. Also, to James Patrick Cunningham, for listening, encouraging, and understanding exactly what this journey meant—from the beginning.

# Chapter 1: Entering the Conversation

*The dichotomies between mind and body, animal and human,
organism and machine, public and private, nature and culture,
men and women, primitive and civilized are all in question
ideologically.*

*Donna Haraway, "A Cyborg Manifesto"*

This study explores and describes the ways in which women who grew up without computers have "made sense" of this technology in their adult lives. Women's relationship with technology in general and computers in particular is a growing field of research and discussion. Conclusions drawn are problematic and widely disputed. Many studies of this issue focus on girls and college-age women (in part because of the ready availability of student subjects). One element largely absent from the current dialogue is perspectives of adult women who grew up without computers but have recently been compelled to incorporate this technology into their work and everyday lives. Perhaps some readers will identify with the stories of the women in this study while others will see that not everyone's experience with learning to use computers is the same. Such a study could have implications for organizations as they consider which new technologies to adopt and how to train existing employees to use those new technologies. Additionally, at a broader level, the study could contribute to ongoing research about the impact of technology on human society as a whole.

In the twenty-first century we stand at the crossroads of the ideological questions Donna Haraway discloses in her ground-breaking 1985 essay "A Cyborg Manifesto: Science, Technology, and Socialist Feminism in the Late Twentieth Century." In this

essay and many other works (see, *Modest_Witness*, for example) Haraway employs the concept, "cyborg" (an organic-machine hybrid) and the vocabulary of cybernetics to voice a concern that late twentieth century feminism is stalled. "Cyborg" is critical to my own project as well. Distinctions between organisms and machines blur as computer technologies permeate and, therefore, shape the everyday interactions of human beings. Of the dichotomies in question, the distinctions between men and women and between machines and organism are linked in the evolving discussion of the "gender gap" in computing.

Anyone who doubts that computing's default gender is assumed to be male need only consult the recent crop of reports, news, and magazine articles touting various attempts to remedy the "problem" with girls/women and computers (AAUW, Camp et al, Chea, Collins, Eisenberg, Furger, Guidera, Klein, Jesdanun). The problem is typically posed this way: "In a increasingly technologically based economy, women need to be computer literate in order to be part of the workforce, yet they don't seem to acquire technical competence as quickly or easily as boys. So, how do we get them to acquire this competence? How to we get them to master this technology?"

In this study I contribute to the ongoing conversation about the relationship between human beings and technology by discussing interviews conducted in the Fall of 1999 with five women who grew up without computers and then, as adults, incorporated "the intimate machine" (Turkle 41-61) into their lives. Patterns emerge from their stories which suggest something other than a linear progression toward mastery of the computer as a tool. Based on findings from these interviews, my thesis is that attempts to "make" girls competent or computers "girl-friendly" will not meet

the goal of "closing the gender gap" in computing—because the terms of both the problem and solution have been misconceived. I propose on alternate picture of gender, computers and competence, based on two assumptions:

1. That a systems perspective (of the type advocated by Latour, Haraway, and cyborgology generally) is necessary to provide a more complete picture of women and competence. The system must equally accommodate people, machines, economics, and culture, at the very least.

2. That women's own accounts of their experiences can, heuristically, be a starting point for a new picture of gender and computing.

Hence, my task is to bring together conceptual and empirical resources in a fruitful way.

## The Ongoing Conversation

The party is in full swing with most guests assembled. Cocktails and appetizers are in abundance, and dinner will be ready in two hours. If you are reading these words, you are a distinguished guest as well. Perhaps you have been engaging in this age-old conversation with these interlocutors for years, but lest any newcomers feel at too much of a disadvantage (since the party has been underway for decades or even centuries depending on your perspective), let me acquaint you with some of the guests and their conversations. These conversations occur simultaneously yet can be distinguished by the discerning palate ("gumbo ya-ya" style). Each provides a unique flavor and texture to the large pot brewing--how technology interacts with human

lives. Some guests engage in tête-à-têtes while some converse in small groups, and still others can be found wandering and muttering to themselves. The topics are many, but key words and issues overheard from shadowy corners, tables, sofas, and even boudoirs include: cyborg, cybernetics, machine, organism, communication, gender, relationship, mastery, pedagogy, anxiety, reticence, intimacy, technology, technopoly, geek, literacy, fluency, imperative, equilibrium, black box, and, yes, enthymeme.

It is impossible to list individually all guests assembled. Technology's interaction with the society it inhabits is an interstitial, interdisciplinary, cross-pollinating, promiscuous sort of subject matter, and so the guest list and the conversation emanating from it are rhizomatous— growing continuously and laterally rather than predictably and hierarchically. One can never tell which lateral shoot or adventitious root will take hold when or where, resulting in promiscuous and fertile expansion below the surface. However, certain types of guests who have figured prominently in this conversation, even if constant newcomers make the guest list difficult to track. This party includes communication scholars, composition scholars, historians, philosophers, psychologists, feminists, cyberneticists, teachers, and employers and workers of all kinds. In short, anyone interested in pedagogy, cognition, communication, sociology, history of technology, gender studies, earning a living, or making a profit has something to say about computers in our everyday lives. Such an expansive guest list reveals that this party—this ongoing conversation—is inherently interdisciplinary.

## The Persistence of "Mastery"

Sherry Turkle in her groundbreaking work, *The Second Self: Computers and the Human Spirit* (1984), uses the terms "hard" and "soft" to describe the different styles of "mastery" children in her study use as approaches to computer programming (104). Turkle uses hard and soft not only to distinguish planning versus tinkering, respectively, as cognitive styles, but also as distinctions between ways of interacting with the computer and identifying with computational objects. Turkle's work has contributed tremendously to the discussion of how human beings relate to computers, but perhaps it is time to examine the implications of using the term "mastery," to describe the relationship between humans and computers. Sixteen years later, the AAUW Tech Savvy report and the host of responses to it are still using this term.

The relationship women and girls have with computers is likened to the relationship women are said to have with language. Computing, like language, is viewed as another set of skills to be "mastered." Margaret Lowe Benston suggests in "Women's Voices/Men's Voices: Technology as a Language," that "Women are excluded from an understanding of techniques and of the physical principles by which machine and tools operate (16). Sometimes this exclusion is self-imposed, and sometimes women are kept from this understanding by others (often men) who are more intimately acquainted with the technology). Benston defines and further underlines the importance of technique:

> Often the underlying knowledge or technique is more important than the actual machines. Technique includes not only this knowledge of how to construct equipment but the knowledge of how to use it. (16)

Part of the "exclusion" stems from the fact that those intimately acquainted with a given technology may be unaware of all the tacit knowledge they have gained along the way. Experts can be incredulous or impatient with the concerns and needs those who are less familiar that technology. Regardless of its source, this exclusion has implications. Benston points to women's marginalization as follows:

> The exclusion of women not only from active practice in scientific and technical fields but from training in basic physical and mechanical principles means that even when women use tools or machines, they are marginal to a male-created and male-dominated technology. (17)

The chief concern of many is that women are reduced to being mere consumers and users of male-dominated technology (as opposed to designers who have a say in its construction). By not being involved in the creation of technology, women are forced to play catch-up not only as creators but even as consumers and users of that technology. If they had no say in its design, it will be harder for them to use as well. The cycle becomes vicious (recalling the roots of this word in "vice"). The longer women and girls fail to be interested in using computers for other than leisure activities, the longer they will stay out of decision-making positions that can alter "valence" of a technology.

## The Search for Valence

Corlann Gee Bush, in her essay, "Women and the Assessment of Technology," describes "valence" as follows:

> A bias or 'charge' analogous to that of atoms that have lost or gained electrons through ionization . . . Particular tools or technologies tend to be favored in certain situations, tend to perform in a predictable manner in these situations, and tend to bend other interactions to

them. Valence tends to seek out or fit in with certain social norms and
to ignore or disturb others. (162)

Langdon Winner, discusses "valence" by another name in the article, "Artifact/Ideas

and Political Culture," and in the book, *The Whale and the Reactor*, as well. The valence

of any technology cannot help but have its source in the ideology of its creators.

Winner contributes to the discussion of valence American citizens to question more

than just the uses and the economic and environmental effects of new technologies,

which are typical ways of evaluating technologies after they have already been adopted.

He asks Americans additionally to consider how decisions about the "development,

adoption, and use of instrumental things affect our shared experience of freedom,

power, authority, community, and justice" (290). Winner argues convincingly that

citizens can use the "metaphors and rhetorical devices of political speech to unpack

the meaning of various technologies" (294). He suggests that the most fruitful

questions about technologies are formulated when people view them as

"artifact/ideas"—political ideas expressed in material form (294). However, the

distractions from focusing on the ideological implications (valences) of technologies

are many, and even attempts to unpack those valences can easily go awry as old

technologies become "invisible" to members of a technological society.

Denis Baron, in "From Pencils to Pixels: The Stages of Literacy Technologies,"

from Hawisher and Selfe's *Passions*, shows how confusing the search for valence

becomes as humans struggle to respond to new technologies: "As the old technologies

become automatic and invisible, we find ourselves more concerned with fighting or

embracing what's new" (31). This tendency to focus on fighting or embracing

happens before human beings have had a chance to comprehend fully the potential of the new technologies. Much of what is attributed to "computers" can be traced to human disappointment with the fact that computers do not automatically solve all the problems of authority and inequality that have proven so intractable in the classroom. Because computers have not solved those problems without conscious choices and effort on the part of humans, they are seen as perpetuating those problems (Allen 371-92, Aschauer 7-232, Belcher 253-267, Pagnucci and Mauriello 141-151, Rickly 121-140, Wolfe 153-156, Zuga 57-71).

Some researchers in the field of composition demonstrate quite clearly that the computer appears as a solution looking for a problem to solve (Winner's "means looking for an ends"). For example, in the article, "The Masquerade: Gender, Identity, and Writing for the Web," authors Pagnucci and Mauriello refer to the economic aspects of the technological imperative as it affects teachers:

> The growing importance of the Internet has led most universities to
> invest thousands of dollars in computers . . .That expensive investment
> has brought with it a mandate that teachers learn to adapt this
> technology for their classrooms (141).

Additionally, Pagnucci and Mauriello open the article with an imaginary quotation, which is perhaps intended to sum up the feelings of the educators in their audience: "All I know is that distance education is at my doorstep. If I don't use it, I'll be out of a job" (141). In this study, college students in a composition class posted their papers on the class web page for peer review. Students were allowed to choose pseudonyms, and one finding was that girls often chose pseudonyms of famous males in hopes of getting more peer responses (i.e., more help) on their papers. Furthermore, no boys

chose female pseudonyms, and some girls chose female pseudonyms that represented what the researchers considered "troubling images of femininity" (examples listed were Pamela Anderson, Jewel, and Victoria Sweet) and avoided what the researchers considered "strong female role models" (examples listed were Hilary Clinton and Mother Theresa) (143). The "Masquerade" article implies that the pseudonym chosen was the only significant variable in students' decisions about which papers to peer review, which seems to discount the possibility that students made choices about which papers to review based on content or title of their peers' papers. The conclusion Pagnucci and Mauriello draw from their data is that "students in cyberspace still carried the baggage we had hoped they could leave behind" (144).

The cycle goes something like this: People want computers to be revolutionary in the classroom because of either an inherent faith in (or an attempt to mask fear of) technology. The amount of money spent on computer equipment and the desire to be innovative creates Winner's "ends without means"—a solution in search of a problem. Eager to embrace the technology made available to them (with or without our asking for it) educators and other employees search for problems they think computers can help solve (e.g., perpetuation of gender stereotypes) but when computers do not automatically solve those problems, then it is tempting to suggest that computers help perpetuate them. Winner states the case as follows:

> While it is true that systems of computation and communications,
> intelligently structured and wisely applied, might help a society raise its
> standards of literacy, education, and general knowledgeability, to look
> to those instruments first while ignoring how to enlighten and
> invigorate a human mind is pure foolishness. (*Whale* 109)

In short, technology must be integrated with pedagogy. Winner suggests that in our enthusiasm to embrace or fight new technology, it is possible to focus too much on the technology and not enough on how it is applied. Excessive focus on the machine itself may conceal other possibilities for socially beneficial applications of that technology within the larger system.

While technologies can have inherent tendencies or "valences" (Bush 162), once those technologies have been adopted, humans can attempt to steer them toward their more positive valences. This plurality of valences may be a key to the confusion about computers, for the computer is a multi-purpose machine. Guns, for example, have a clear valence toward violence, but computers have many purposes and valences of which their original creators were unaware. Communication, a primary purpose of computers now, for example, is far more complex than data and number crunching, the original purposes for which the computer was designed. (For an accessible yet thorough discussion of the original purposes and unforeseen impacts of the computer, Campbell-Kelly and Aspray's *Computer: A History of the Information Machine* is an excellent resource).

The complexity of the computer as a technology comes in part from the various communication technologies that have come with it. People want to decide whether computers are primarily good or bad (to be embraced or fought) and to determine what computers do to power structures in the classroom. In a search for the valence of the computer, oversimplification is dangerous. Such a complex machine has multiple valences in its guise as an aid to learning and communication. The search for

valence is a noble one.  However, other questions need to be asked as well for, as

Hawisher and Selfe suggest, it is often *how* teachers employ the technology in their

classrooms (the technology of pedagogy, if you will) that makes the real difference in

the affect computers have on the power structure.  The potential for democratization

and collaboration exists, but the technology does not inherently ensure it, as evidence

from various computers and composition studies suggest (Allen 371-92, Aschauer 7-

232, Belcher 253-267, Pagnucci and Mauriello 141-151, Rickly 121-140, Wolfe 153-

156, Zuga 57-71).  Good pedagogy applies technologies in ways that "enlighten and

invigorate a human mind" rather than engaging in what Hawisher and Selfe refer to as

"administrator pleasing behavior"—praising computers for the sake of justifying the

money spent and appearing to have a good attitude ("Rhetoric" 129).

In their introduction to *Passions and Pedagogies and 21ˢᵗ Century Technologies*, Hawisher

and Selfe wisely appropriate Margaret Mead's term, "prefigurative," from *Culture and

Commitment: The New Relationships Between the Generations in the 1970s*, to describe the

situation composition instructors and scholars face in the writing classroom and,

indeed, all instructors who include writing in their courses face to some degree.  Many

feel ill equipped to prepare students for this "information revolution" and must

somehow find a way to guide our students as best we may, including getting out of

their way (Introduction 4).  Hawisher and Selfe point to the necessity of teachers

giving up a certain amount of authority in the classroom when adopting and adapting

to computers.

> Unlike previous generations of English professors, we cannot promise
> to provide students with a stable and unchanging body of
> knowledge—especially in connection with technology use.  Indeed, we

cannot even provide ourselves with such intellectual comforts.
(Introduction 4)

The loss of "such intellectual comforts" is precisely what Neil Postman decries

throughout *Technopoly: The Surrender of Culture to Technology*, in which he rails against

what has so often been called the "postmodern condition." Hawisher and Selfe

instead argue for accepting the reality of technology's role in human society. In their

concern that computers be appropriately integrated with classroom pedagogy,

Hawisher and Selfe seem likely agree with historian of technology Tim LeCain who

cautions educators who attempt to accept the "prefigurative" status of technology and

the changing power structure in classrooms not to abdicate their responsibility to give

clear and specific guidance to students—and fellow teachers—whenever it is still

possible to do so.

## Methodology

The central research question for this study is "How do individual women make

sense of the computer in their everyday lives?" Open-ended questions (see Appendix

F for question list) were asked in the following categories: self and relationship to

technology in general, early experiences in learning to use a computer, current use of

and relationship with computers, perceptions of gender or personality-type issues in

computer use, and experiences with specific computer tools and uses. All five women

answered all questions except in cases where the respondent had little experience with

particular computer tools or uses (see Appendices A-E for individual transcripts). I

recorded four of the five interviews on audiotape while taking written notes. One

subject, Dale, preferred to be interviewed via e-mail. This study was approved by Oregon State University's Institutional Review Board for the Protection of Human Subjects. All policies and procedures for research involving human subjects were observed.

Open-ended questions were designed to help each woman to emphasize what she felt was important in her own experiences with computers. Each woman presented a clear, strong individual voice, yet these women echoed one another with remarkable frequency. As noted earlier, recent qualitative studies have focused largely on girls and college-age women partially because of the readily available pool of subjects and also because of the sense of urgency about the shrinking pipeline. This is incredibly important work. This study hopes to infuse that work with an additional perspective by checking in on women who already have been out in the work force for years.

Themes that run through the five women's narratives include initial fear, anxiety, and frustration with the pedagogy in computer classes; feeling "othered" and alienated by the machine; next, a sense of accomplishment when mastering tasks (usually after experimenting on their own and eventually finding a "guide" to assist); and eventually a love of the connections and accessibility of information enhanced by communication technologies (e.g., Internet and E-mail). It is from these common themes that the stages (1-4) of what I call the "cyborg feedback model" emerged. I created an introductory stage, "Stage 0," as well, which is described below. The stages of the cyborg feedback model may be summarized as follows:

- **Stage 0—I'm OK/It's OK: A Double Gesture.** This "stage" introduces the women in this study, providing a glimpse of their experiences with and feelings about technology before the computer entered their lives.

- **Stage 1—Technology Knocks: "Enter the Fearful Box."** This stage shows how the computer came into each woman's life via a technological imperative that upset the individual equilibrium that existed before the machine entered her life.

- **Stage 2—Learning Hurts: Pedagogy as Pain.** This stage illustrates the negative impact of classroom situations that frustrated the women's attempts to learn how to use the machine.

- **Stage 3—Pain Motivates/Coaching Helps: Competence in Connection.** This stage shows how each woman eventually realizes she needs something more to engage the computer meaningfully. That "something more" turns out to include one-on-one coaching—human connection and contextual learning.

- **Stage 4—Beyond Mastery: Intimacy with/through the Machine.** This stage reveals that the women in this study eventually transcend the instrumental goal of learning to use the machine as a tool, finding ways to better connect to both themselves and others with the machine. The women are not so interested in "mastery" after all but, rather, integration of the intimate machine into their daily lives.

Chapter 2 discusses this cyborg feedback model in more detail, providing a theoretical framework for understanding these women's experiences from systems perspective.

This model is then exemplified through the women's individual voices in Chapter 3, "Cyborg Witnesses."

Regarding those individual voices that emerge in Chapter 3, a brief biographical introduction of the five women who are the subjects of this study follows. The purpose of these introductions is to establish context and help readers identify the individual women. I refrain from giving detailed information, however, because the purpose of interviews, in part, was to empower the women in this study speak for themselves by choosing what they feel is important for readers to know about their personal backgrounds. The women interviewed for this study are called by fictionalized names: Amy, Bonnie, Cynthia, Dale, and Elena. Names of loved ones mentioned in the interviews have been fictionalized as well.

Amy, the youngest interviewee, is 33-year-old speech and language specialist with a master's degree. She has been deaf since she was eighteen months old. She is an only child who was raised and schooled in the hearing world. Amy has participated in the "hearing world" her entire life thanks largely to her mother's encouragement and her own determination. In one-on-one conversation with Amy, her hearing impairment is not apparent because of her clear speech and ability to read lips. Amy is a speech and language specialist for hearing children in grades K-8. She is engaged to Bonnie's son.

Bonnie, the oldest interviewee, is a 60-year-old, newly retired instructional assistant who attended college for one year. She works in small groups with learning-disabled and emotionally disturbed children and assists the head learning specialist with data entry for Individual Education Plan (IEP) reports. She is married and has two grown children. Her son is Amy's fiancée.

Cynthia is 42-year-old former music teacher who now is taking coursework and small freelance desktop publishing jobs in hopes of becoming a technical writer. She has done now works at a high-tech engineering firm in an administrative position. Her longtime partner is an engineer at a high-tech firm.

Dale is a 49-year-old writer who is also a Ph.D. candidate in a myth and folklore program. She has been a bookkeeper and administrative assistant for much of her career. She is married and has three grown children

Elena is a 46-year-old master's candidate who teaches communication courses and coaches forensics at a public university. She is divorced and has two grown sons and a school-age daughter. A potential partner who is technologically savvy has recently entered her life.

Recording what people have to say about technology is an important project to which this study aims to contribute. Though this discussion includes gender, it is not a comparative study of women and men. Instead, I chose to flee traditional "objectivity" and embrace the network by beginning with my closest nodes—women. We are all women who are educators, former educators, and/or graduate students. I interviewed women who, like myself, essentially grew up without computers and had something they wanted to say about the journey toward incorporating the machine into their everyday lives. Together, the six of us were checking in on the standard account of "mastery" as the cure for women's perceived anxiety over technology. This study is exploratory and inventional—heuristic in the original sense.

# Chapter 2: Cyborg Feedback Model

*I am mixing up systemic society issues with personal ones, but this is because I think they are as intertwined in this [technological] realm as in all aspects of people's lives. Machines become our tools, friends, and/or oppressors for political and personal reasons that become interwoven and hard to sort out.*

*Ruth Hubbard, Machina Ex Dea*

The journeys of the women in this study are certainly individual, as an examination of the transcripts (see Appendices A through E) reveals, but the common patterns that emerge are striking as well. We understand each woman's journey better through examining common patterns as they play out in individual situations. Likewise, these emergent patterns are better understood in context by examining each woman's journey. Together, the individual journeys and patterns suggest a cyborg feedback model, which, in addition to growing out of these women's experiences, also has roots in a field called cybernetics.

This chapter begins by examining the term "cyborg." Cyborg roots grow from many directions, including that of systems theory, the first topic of discussion in this chapter. Given the central research question of this study—how these five women make sense of the computer in their everyday lives— systems theory leads to examination of another social construct, the "technological imperative," which is the second topic. The technological imperative, once unpacked, serves as a catalyst for the engine of a machine I call the "cyborg feedback model," the final topic of Chapter

2. This model, based on the women's narratives, then provides a framework for exploring their journeys from unplugged to wired in Chapter 3: Cyborg Witnesses.

## What's All This About Cyborgs?

*A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction... The cyborg is a matter of fiction and lived experience that changes what counts as women's experience. . . .This is a struggle over life and death, but the boundary between science fiction and social reality is an optical illusion.*

*Indeed, tool and myth mutually constitute each other.*

*Donna Haraway, "A Cyborg Manifesto"*

Some people are frightened or simply puzzled at Donna Haraway's suggestion that all humans are cyborgs. When most people encounter the term cyborg, they often think of science fiction stories and comic books in which half-human, half-robot beings terrorize humans. The simple definition of a cyborg is a human-machine hybrid. Surprisingly, the term, "cyborg," (cybernetic organism) was not invented by Norbert Wiener, author of *Cybernetics: Or Control and Communication in the Animal and the Machine*, which was published in 1948, nor did it come from earlier science fiction. However, the concept of the cyborg is a logical outcome implied by Weiner's ideas and early science fiction. The word, "cyborg," was first coined in 1960, by Manfred Clynes and Nathan S. Kline, two scientists pondering the adaptability of humans to space travel.

What are some of the devices necessary for creating self-regulating man-machine systems? The self-regulation needs to function without the benefit of consciousness, in order to cooperate with the body's

own autonomous homeostatic controls. For the artificially extended homeostatic control system functioning unconsciously, we propose the term, "Cyborg." (Clynes and Kline 27)

Chris Hables Gray, editor of *The Cyborg Handbook* (1995), suggests four centers of cyborg creation: military, medical research, entertainment, and work. According to Gray, cyborg technologies can restore (replace something lost), normalize (make something or someone function "normally"), reconfigure (as when we connect with others in cyberspace or prepare for space travel), or enhance (primarily military or industrial research) (4). Cyborgs are people like Data and Georgdi LaForge on *Star Trek Next Generation*, grandmothers with pacemakers, friends sending embarrassing photo attachments from the previous camping trip, graduate students taking anti-anxiety drugs while working through a dissertation, fishing widows calling their husbands in the "hog line" via cell phone, and you, pointing and clicking to purchase the latest Harry Potter book at www.amazon.com. Immunization, psychopharmacology, and human genetic engineering are all cyborgian processes when the definition of cyborg includes restoring, normalizing, and reconfiguring as well as enhancing (3).

Cyborgology emerges as a political stance, methodology, terministic screen, if you will, at the end of the twentieth century, ushered in primarily by Donna Haraway's essay, "Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century." An organic-machine hybrid, the cyborg is a postmodern being, by definition a boundary transgressor, a shape-shifter, whose point of entry is the interstice among three "crucial boundary breakdowns:" human-animal, human-machine, and finally physical-non-physical. Perhaps the boundary between these

breakdowns is itself a "leaky distinction." Donna Haraway refines this definition of

"cyborg" as follows:

> Post-Second World War hybrid entities made of, first, ourselves and
> other organic creatures in our unchosen 'high-technological' guise as
> information systems, texts, and ergonomically controlled laboring,
> desiring, and reproducing systems. The second essential ingredient in
> cyborgs is machines in their guise, also, as communication systems,
> texts, and self-acting, ergonomically designed apparatuses. (*Simians*
> 174)

## Rhizomatic Roots: Unpacking a Cyborg Lexicon

Words are like Bruno Latour's black boxes—full of assumptions. When someone

says, "house," we each come up with a different mental image, whether based on

memory, the place we currently live, or an idealized version of what one's ideal home

might be like. While "house" seems concrete enough, "home" is packed with feeling.

Many words that seem material on the surface turn out to be conceptual when spun

out in human minds. Concepts are the slipperiest words of all. And humans must

unpack these black boxes to communicate and understand one another. Black boxes

are like enthymemes (syllogisms in which one premise is not explicitly stated because

of an assumption that the audience "knows" the rest). Aristotle viewed enthymemes

as, "the orator's proper modes of persuasion" (152). Walter Ong, in *Rhetoric, Romance,*

*and Technology,* suggests that the use of enthymeme involves the subconscious because

"*enthymema* primarily signifies something within one's soul, mind, heart, feelings, hence

something not uttered or 'outered' and to this extent not a fully conscious argument,

legitimate though it may be" (12). Ong suggests that neither speaker nor audience is

fully aware of the argument in an enthymeme. Words, too, are like enthymemes in that

they are based on unstated, even unconscious, assumptions. Given the ambiguousness of language, establishing and examining a cyborg lexicon is an appropriate step toward understanding the cyborg feedback model. Unless stated otherwise, definitions that follow come from *The New Shorter Oxford English Dictionary*, 1993 edition. Beginning at the root of the model means first unpacking the term, "cyborg," and then seeing where it leads.

> **Cyborg:** [Blend of cybernetic and organism.] A person whose physical tolerances or capabilities are extended beyond normal human limitations by a machine etc., an integrated man-machine system.

"Cyborg" is actually more complex than this definition suggests, for now not only physical but also mental and emotional capabilities can be extended. Not only can human capabilities be extended, but, as mentioned previously, they can also restored, normalized, or reconfigured (Gray 3). Finally, cyborg is not just a "man"-machine but also woman, human, and not just human but also organism.

> **Cybernetics:** [from Greek, *kubernetes*, "steersman," kubernan, "to steer"] The science of systems of control and communication in living organisms and machines.

It is fascinating to note the coupling of "control" and "communication" in the definition of "cybernetics." In human relationships with machines or other humans, the issues are often about control (power) and communication (relationship). Communication in relationships largely concerns power and control as well—so much so that cybernetics could be "the science of systems of relationships among living organisms and machines." It is also fruitful to think whether the adjective "living" applies to machines as well as organisms. Relationships are "systems" of interactions, so perhaps cybernetics is really the science of relationships.

**Organism:** 2a An organized or organic system; a whole consisting of dependent and interdependent parts, resembling a living being. 2b The theory that in science everything is ultimately an organic part of an integrated whole. 3. An individual animal, plant, bacterium, etc.

The word, "organism," then, by definition has to do with both parts and wholes, living and "resembling living," mechanical, technical, and natural; and individual and system.

**Organ:** A part of an animal or plant adapted for a particular function. The human organs of speech or voice collectively; the larynx and its accessories as used in speaking or singing. C. Phrenology. Each of the regions of the brain held to be the site of particular mental faculties d. The penis. 5. *History.* A mechanical device, esps a firearm, a machine-gun. 6a A means or action or operation; an instrument. Now esp., a person body of people or thing by which some purpose I carried out or some function is performed. B. A mental or spiritual faculty regarded as an instrument of the mind or soul. C. A means or medium of communication; spec a newspaper or journal which serves as the mouthpiece of a particular party, movement, etc.

**Organic:** Latin- *organum* = instrument, engine, musical instrument, from Greek *organikos* pertaining to an organ, instrumental, from *organon* Instrumental. 1 *Biology and Medicine.* Of, pertaining to, or of the nature of a bodily organ or organs; ( of a disease) resulting from physical or metabolic disorder, accompanied by actual physical change in body tissue. 2. Serving as an instrument or means; instrumental 4a Of, pertaining to, or derived from a living organism; having the characteristics of a living organism. 4b Chemistry. Of, pertaining to, or designating carbon compounds, orig. those naturally existing as the constituents of living organisms or derived from such compounds); containing carbon in combination. Also, (of an element) contained in an organic compound 5a Inherent in the organization or constitution of a living being; constitutional; fundamental 5b Belonging to the constitution of an organized whole; structural 6b Done by means of technical instruments; mechanical 7. Of pertaining to, or characterized by connection or coordination of parts in one whole; organized; systematic. b. Organizing, constitutive. Characterized by continuous or natural development suggestive of the growth of a living being. D Architecture. Of a building, architectural style, etc.: reminiscent of or resembling a natural organism; spec designating architecture that attempts to unify a building with its surrounding.

Many have come to think of "organic" as living, but this word's roots include

instruments, means, and systems—mechanistic terminology that permeates the natural

and living meanings "organic" now holds. The word, organic, the root of "organism" which makes up a half of the whole cyborg, is cyborgian as well. Its roots contain elements of the living and the natural as well as traces of its instrumental/technical roots.

> **Machine:** Gk. *Makhana*--a structure of any kind, material or immaterial; something constructed. A ship, a boat 4. An apparatus, an appliance; a device for applying mechanical power and having a number of interconnected parts, each with a definite function, esp; one that does not utilize human strength; and apparatus of a particular (specified or understood) kind; a bicycle, a motor vehicle; an aircraft; a computer; a typewriter b. Any instrument that transmits force or directs its application. C. The penis. Also, a condom.

> **System:** Gk sustēma. 1. A group or set of related or associated material or immaterial things forming a unity or complex whole. B. Sci. A group or set of objects naturally associated or of phenomena sharing a common cause. C. A set of objects or appliances arranged or organized for some special purpose, as parts of a mechanism, components of an interdependent or interconnecting assembly or network. 2. A body of theory or practice pertaining to or prescribing a particular form of government, religion, philosophy, etc.; a conspectus of a subject. C. With "the". The established or prevailing political, economic, or social order, esp. regarded as oppressive. Also, any impersonal restrictive institution or organization.

After sufficient unpacking, "cyborg" might boil down to something like this: As a combination of "cybernetics" and "organism," the cyborg is the embodiment of machine-organism relationships within a system.

And so everything is linked to everything else in these systems of words—a complex, cross-pollination that defies separation or complete description. Everything is organic and machine, interconnected, interdependent, partial and functional. "Nature" links with machines in each word that makes up the definition of "cyborg." The term "cyborg" is thus inherently a double-gesture, simultaneously signifying

machines and living beings. The terms that make up the semantic system inside the black box "cyborg" are double gestures as well—simultaneous attempts to separate the living from the non-living while connecting them. Machines and organisms appear to be interlocking metaphors for one another however humans may desire to keep them separate.

If the roots of "cyborg" are so tangled, how can a construct called "cyborg feedback model" reveal something about the way the five women in this study made sense of the computer in their everyday lives? First, we accept the commingling inherent in the term, "cyborg." Next, we must also accept that given the current limitations of language confined to a printed page we must break everything down just to begin to talk about it at all. This breaking down (analysis) of constituent parts goes solidly against the systems theory approach (synthesis) to which a cyborg lexicon gestures. However, despite this apparent dichotomy, analysis and synthesis can work together to enhance understanding. The trick is to keep an open mind, recalling that everything confined to the page at a specific point in time is only one version of one story in a collection of stories that make up the ongoing conversation about technoscience in/as society.

## Organic-Machine Networks: Systems Theory in Action

Without referring directly to systems theory, Bruno Latour, in *Science in Action*, puts systems theory into practice unpack the inner workings of technoscience by recognizing technoscience as a network, as a system of humans, machines, and relationships. Latour's tool, actor-network theory, is a way of viewing the actors

(things and people) at work in any "text" one may wish to observe, a way of opening up black boxes to see the inner workings of a system that produced any particular outcome. This study of five women explores the network of relationships between and among machines, organisms, and the environment/systems they inhabit, using the cyborg feedback model that emerged from those interviews. At each stage of the journey machine inputs/outputs, organism inputs/outputs, and environmental variables, shed light on the women's stories.

Parts in a system are connected by energy and information flows. Bodies are systems of energy and information flow (food equals fuel, and information flows between the brain and various body parts). As society becomes increasingly information-based through the pervasiveness of computers, knowledge (or at least information management), more than anything, is power. The increasing importance of information flow in society makes clear the need to move beyond a simple cause and effect model for understanding how and why the computers have such an impact on our lives.

## The Cyborg Feedback Model

Taking a cyborg lexicon and systems theory in hand, we can see that human beings are organisms, computers are machines, and as part of a larger system, both machine and organism are affected not only by one another but by environmental variables. Additionally, the machine can be viewed as part of an organism's environment and an organism as part of machine's environment. At each stage of the journey from

unplugged to wired, we encounter machine inputs and outputs, organism inputs and outputs, and environmental variables. Machine and organism provide inputs and outputs to one another. Within this cyborg (organic-machine) relationship, we see an interdependency in which one's output becomes another's input, forming a kind of circle. The cyborg relationship can be viewed as a yin/yang entity, in which each element affects and is affected by the other. They form an inner circle as each woman works to incorporate the external motivators (imperatives) that place her forcibly in relationship with the machine. Together woman and machine work in the face of environmental variables that can both enhance their relationship and make it more difficult. The environmental variables also provide inputs to the cyborg and receive outputs that become inputs that in turn affect future outputs from environment to cyborg, but we find that this inside/outside distinction does not work, either. In a system, parts affect whole, inputs to the whole affect parts, and ultimately, there is a huge system and many subsystems that affect it. So, a cyborg affects and is affected by environment. As R.C Lewontin states in *Biology as Ideology*, "Organisms don't experience environments. They create them" (109):

> The first rule of the real relation between organisms and environment
> is that environments do not exist in the absence of organisms but are
> constructed by them out of bits and pieces of the external world.
>
> The second rule is that the environment of organisms is constantly
> being remade during the life of those living beings. (Lewontin 113)

Regarding the relationship among parts and the whole in this system, Margaret Lowe Benston couples technology with society in her chapter, "Women's Voices/Men's Voices," in *Technology and Women's Voices: Keeping in Touch* by stating, "Everyone interacts with the underlying technological system; technology and society

are words for different aspects of the same whole" (Benston 16). Recalling the opening quotation of this chapter—"I am mixing up systemic society issues with personal ones, but this is because I think they are intertwined" (Hubbard vii)—the narratives of the five women in this study also can be viewed as interactions between technology and society in microcosm. Examining how individual women (who are teachers and have been students in the U.S. public education system) perceive their relationship with one particular technology, the computer, may reveal something about how technology, "as a social force. . .is now deeply intertwined with major institutions of the society" (Benston 17).

Though each woman's response to this social force (a.k.a., the technological imperative) is unique, there is a strikingly similar pattern in their journeys, which may tell us something not only about each individual woman but about how human beings adapt to externally induced change. The pattern of their journeys can be viewed in five stages: I'm OK/It's OK, Technology Knocks, Learning Hurts, Pain Motivates/Coaching Helps, and Beyond Mastery. Each stage begins with actions (inputs) that catalyze a series of responses (outputs), which, in turn, become the next inputs toward or away from equilibrium on the path from unplugged to wired.

We have the computer, the individual woman, and social forces bringing them together. Once the machine and the woman are pushed together, they, in turn, influence each other and the social forces that placed them together in the first place. What emerges is a cyborg model based on a cybernetic machine-organism-environment feedback loop, a sequence of actions in response to a technological

imperative that says, "Here is the machine we think you need. Make it work so it can help you do your work." Enter the machine.

## Unpacking the Technological Imperative

The term, "technological imperative," is becoming a sort of black box. Building on Norbert Wiener's *Cybernetics* and *The Human use of Human Beings*, any "imperative" can be viewed as a response to perceived disturbance in equilibrium. Inside the technological imperative are military, social, communication, and economic imperatives. Systems theory states than each part affects the parts in a system as well as the whole; however, that large-scale processes and systems affect smaller ones moreso than the reverse. Thus, systems theory and cybernetics suggest that when a large social imperative occurs in an effort to establish equilibrium for a society, that attempt at equilibrium creates a disequilibrium for individuals within the society. The history of the automobile's popularity in the United States offers a clear example of how large-scale imperatives (attempts at equilibrium) can affect individual lives. Several imperatives created the "need" for everyone to have an automobile.

In tracing the history of the automobile in the United States, the impact of Eisenhower's 1956 Interstate Highway Act (IHA) can hardly be overestimated. As the largest peacetime construction project ($26 billion) in U.S. history, the IHA emerged as an imperative in response to a supposed need for "defense" (a path for quick transportation out of the cities in case of war). Regardless of the need to which this imperative responded, it effectively eliminated many public transportation alternatives

previously available before so much money (75% of all transformation funding) was

channeled into IHA (LeCain). Military, political, and economic forces combined to

require people to own cars. The IHA, as a national imperative (response to a

potential disruption of equilibrium in the form of war), created an imbalance for

individuals, who, with fewer transportation alternatives, were forced to turn to the

automobile to regain a state of transportation equilibrium.

Steven Jones, in his article "Understanding Community in the Information Age,"

likens the imperative for a national highway system to the imperative for an

information superhighway, pointing out the military beginnings of each (10). (The

computer, after all, was first designed to speed up production for firing tables in

World War II, and, ARPAnet, the precursor of the Internet was originally designed to

enhance military communications.) Paul Edwards in *The Closed World* argues ways in

which the Cold War both shaped and was shaped by the computer. "We can make

sense of the history of computers as tools only when we simultaneously grasp their

history as metaphors in Cold War science, politics, and culture" (ix). Having seen that

the technological imperative certainly can include political, social, communication, and

economic imperatives, further explanation is needed to understand how imperatives

originally introduced to establish societal equilibrium disturb the equilibrium of

individuals.

In an individual, a disturbed equilibrium presents as anxiety due to a feeling of loss

of control. Technology threatens some cherished individual values while supporting

others. Thomas Hughes, in his article "The Technological Torrent" agrees with Lewis

Mumford that technology both shapes and is shaped by values (Blake 125-37):

> Inventors, industrial scientists, engineers, and system builders have
> been the makers of modern America. The values of order, system, and
> control that they embedded in machines, devices, processes, and
> systems have become the values of modern technological culture.
> These values are embedded in the artifacts, or hardware. (Hughes )

The "value laden" nature of technology is symbolized by Max Weber's theory of "rationalization" (Ritzer ff). For Weber, such an equation for rationalization might go as follows: **capitalism + industrialization = rationalization**. The technological imperative, in the service of capitalism and industrialization, has tended to support societal values such as efficiency, predictability, calculability, and control at the expense of personal values, such as individuality, privacy, freedom, and spontaneity. This sacrifice of individual values to attempts at societal equilibrium creates a sense of anxiety from feeling a loss of personal control.

Ultimately, for the women in this study, an awarenesses and acceptance what they can and cannot control is the best means of regaining control (re-establishing equilibrium) of their lives in the face of technological change. They cannot stop the marching onward of the technological imperative, but they can control how they respond to the anxiety it produces. They may begin with paralysis or avoidance, but ultimately they push beyond it—at least enough to do their jobs. And perhaps something unexpected can happen once a certain level of equilibrium is restored. They are then free to notice other imbalances and establish their own imperatives to re-establish equilibrium.

One version of these women's responses to the technological imperative (in the shape of a personal computer) emerges from the transcripts of their interviews in stages—from 0 (I'm OK/It's OK, in which machine and organism are separate) to 4

(Beyond Mastery, in which machine and organism unite). One possible representation of those stages is an extended *spiral* ("a progressive increase or decrease, especially one in which two factors each respond to the stimulus provided by the other") with five coils. Another term for coil is "convolution" (" fold, turn, or twist of something coiled; a complexity;" " any of the folds of the surface of the brain;" and from mathematics, "an integral function of two of more given functions; an analogous summation").

Figure 2.1 represents the stages of the cyborg feedback model as an extended spiral. The twists and turns of the coils are a metaphor for how, when thrown together, organism and machine (now a potential cyborg couple) each "respond to stimuli provided by the other" and to the stimuli provided by the environment (system) they inhabit together. To understand the story about to unfold, keep in mind that this environment/system that machine and organism inhabit is the very source of the technological imperative— the one that disturbed each woman's equilibrium by placing organism and machine (woman and computer) together in the first place.
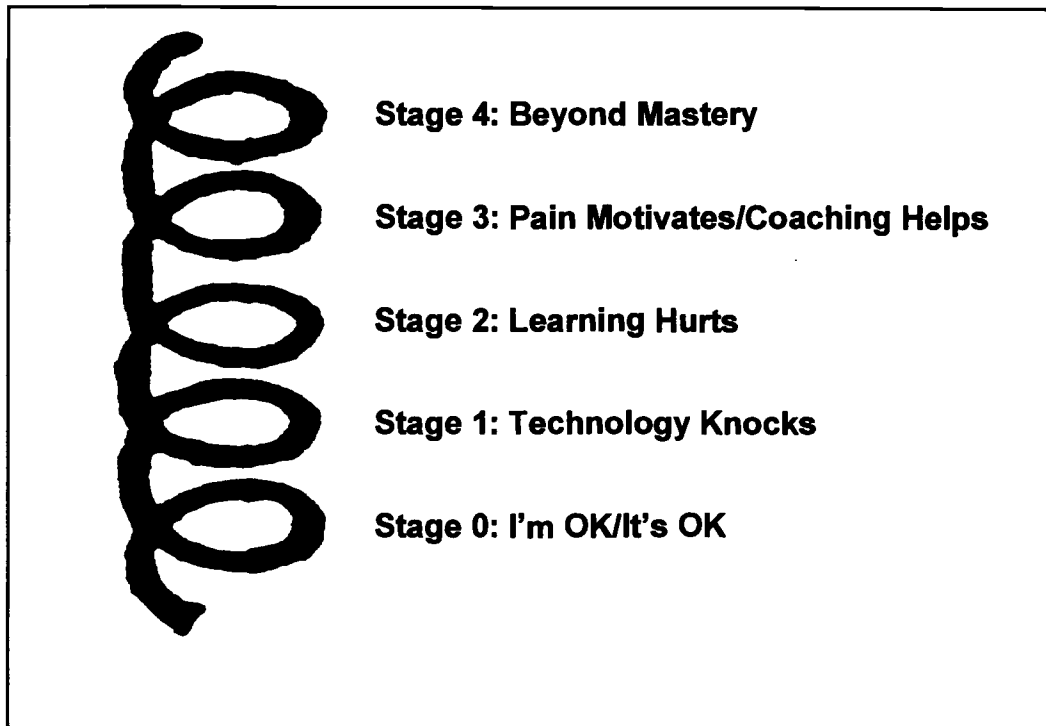
**Figure 2.1:** **Stages of cyborg feedback model (convolutions of the spiral journey from unplugged to wired).**

# Chapter 3: Cyborg Witnesses

*If we can argue by Enthymeme, we should use our Examples
as subsequent supplementary evidence. . . . If they follow the
Enthymemes, they have the effect of witnesses giving evidence,
and this always tells.*

*Aristotle, On Rhetoric (1394a)*

According to standard accounts, women have a unique experience of anxiety when it comes to technology. Perhaps when it comes to computers women are struggling to find ways to adapt to yet another male-mandated technology and make it their own. However, in the AAUW report, *Tech Savvy: Educating Girls in the New Computer Age*, school-age girls interviewed speak not so much of a fear of computers but of reticence. The see computers as sites where boys play at control and mastery, tinker with technology just because they like playing with machines, and avoid the complexity of human relationships. Girls have internalized the cliché of the geek/hacker style computer virtuoso and have no desire to emulate it. The AAUW also notes the defensiveness behind the reticence girls express and, rather than turning the issue into a debate over the right way of engaging with computers, suggests that girls can benefit from overcoming their fear of the machine (AAUW 8-10). Readers of this report will note the influence of Turkle's "Computational Reticence: Why Women Fear the Intimate Machine."

As mentioned in Chapter 1, many articles in popular press as well as studies of the social impact of technology are currently focused how girls are faring with computers in the classroom because so few women are entering, and so many are leaving, high-

tech professions such as engineering and programming. Much of this discussion focuses on women in high-tech positions without examining the status of women who have not chosen high-tech careers *per se* but whose careers have been affected by the pervasiveness of the computer in human existence. Many adults are already in established careers that have been transformed by technology or have chosen to further their education at universities, community colleges, and in the workplace. What it means to hold any job and what it means to be a student in any discipline have been transformed by the ubiquitousness of the computer. How are those who have had the computer thrust upon them faring, those whose lives seemed "just fine" until the arrival of what Turkle calls the "intimate machine"?

Regarding this question, the AAUW report includes a chapter on teachers' perspectives on technology and the resulting classroom dynamics (13-25). While my own study did not begin as an exploration of teachers and students but rather "adult women who grew up without computers," the five women who first showed an interest in being interviewed for this study all turned out to be educators and graduate students. As mentioned in the biographical sketches of Chapter 1, Amy is a speech and language specialist a few years into her career; Bonnie, a retired instructor of learning disabled children and administrative assistant to a learning specialist; Cynthia, a former music teacher who hopes to freelance as a technical writer; Dale, a writer who is also a graduate student in mythology studies and has served as an administrative assistant and bookkeeper, and Elena, a graduate student and instructor in communication.

In tracing these women's journeys from unplugged to wired (cyborg status), each

woman speaks in her own words, through direct quotations from transcripts, and then

I add my own voice to the conversation through explanation and analysis of those

responses. The excerpts and analyses are organized according to the stages of cyborg

development that emerged from the interviews themselves. In Stage 0: I'm OK/It's

OK, the women introduce themselves (see also brief biographical sketches of each

woman in Chapter 1) by recalling experiences with and feelings about technology

before the computer entered their lives. In Stage 1: Technology Knocks, the

computer eventually enters the women's lives via a technological imperative that

upsets the sense of economic or social equilibrium previously existed. Stage 2:

Learning Hurts reveals the frustration aroused by attempts to learn to use the machine

in an unproductive classroom situation. In Stage 3: Pain Motivates/Coaching Helps

each woman realizes she needs "something more" if she hopes to engage the machine.

In each case, "something more" includes one-on-one coaching—a combination of

human connection and contextual learning. In Stage 4: Beyond Mastery, each woman

transcends learning to use the machine as a tool and finds ways to better connect to

self and/or others with the machine. In this final stage, the women interviewed reveal

that the ends of computing for them go beyond "mastery" of the tool toward

integration of the intimate machine into their daily lives.

Before beginning the circuitous journey from unplugged to wired, it is important

to understand how the women in this study viewed themselves in relationship to

technology/machinery before the intimate machine entered their lives. As Elizabeth

Tonkin states in *Narrating Our Pasts*,

> Memory is part of cognitive empowering and a means to being; it is
> developed through social interaction; it is medium as well as message.
> The contents or evoked messages of memory are also ineluctably social
> insofar as they are acquired in the social world and can be coded in
> symbol systems which are culturally familiar. (112)

Questions such as, "What images does the term technology bring to mind?" "Do you

consider yourself mechanically or technologically inclined?" and "Who or what

influenced your beliefs about this?" took the women back in time. The five women's

baseline responses to technology are indicated in Stage 0. In the interest of brevity,

for stages 1-4, only the most salient excerpts from the transcripts (see Appendices A-

E) are quoted.

## Stage 0—I'm OK/It's OK: A Double Gesture

*Q.*    *Do you consider yourself mechanically or technologically inclined?*

*A.*    *No.*

*Q.*    *Why not?*

*A.*    *Because I have never set my spirit to do it.*

*Q.*    *Who and what have influenced your beliefs about this?*

*A.*    *Society. (Elena ln 11-17)*


Stage 0, "I'm OK/It's OK," can be interpreted in at least two ways. "I'm OK/It's

OK," can be interpreted at face value: "I'm fine; technology is fine; it's all good." A

separation between self and technology is clear in such a statement. Additionally, "I'm

OK/It's OK" can be a refusal, a polite disavowal, as in the following:

*Q  Would you like dessert.*
*A  No, I'm OK*
*Q  Would you like another glass of wine?"*
*A  It's OK. I'm fine.*

I'm OK/It's OK brings with it possibilities of both acceptance and refusal—a double-

gesture, which embodies ambivalence the respondents have toward technology before

the intimate machine enters their lives. Before saying "Yes" to the potential new

relationship, Amy, Bonnie, Cynthia, Dale, and Elena consider the matter in the

context of who they are and the computer's potential for positive and negative impacts

on their lives. To answer the larger research question, "How do you make sense of

the computer in your everyday life?" I began by asking each woman about her

relationship with technology in general, as in Question #4: "Do you consider yourself

mechanically or technologically inclined?" (See Appendices A-E for complete

interview transcripts and Appendix F for a complete list of interview questions.)

Responses to technology in general include anxiety around certain types of technology,

a sense of competence with other types, and the feeling of having been socially

conditioned to think technology was for men and boys, not women and girls.

## Techs-Mechs: From Can Openers to Computers, It's About Control

Posing the question, "Do you consider yourself mechanically or technologically

inclined?" evoked contradictory notions of self in relation to machines. Each

woman's responses showed a tension between feeling in control of some machines

while feeling controlled by others. My original intent with this question was to

establish a baseline regarding how these women viewed themselves in relation to

technology in general. When phrasing the question, I viewed it as fairly straightforward, with "technological" as broadening and clarifying the term, "mechanical." Fortunately, the women set me straight, revealing that not all technologies are the same. They felt safe with (in control of) some technologies while feeling anxious about (controlled by) others. Four of the five women interviewed clearly saw the question as dividing the universe into two types of machinery (technical and mechanical) and assumed I was asking which one they inclined to more. "Mechanical" appears to mean "hands-on," "visual," and "something I can control" whereas "technological" means "electronic," "invisible," "mysterious," and "potentially dangerous." Another way of describing invisible technologies is to say such technologies are "black boxed."

## Hands-On Versus Black-Boxed

Thus, despite standard accounts of women not being mechanically inclined or being fearful of machines (lumping all technologies together), three of the five women (Dale, Bonnie, and Amy) expressed having an affinity for mechanical (hands-on) machines. For example, Dale refers to being responsible for keeping her sewing machine oiled and unclogged at an early age, and Bonnie reports fixing things around the house that her mother was unable to fix. Not all technologies are created equal, and some are more frightening than others. Of the two women who claim no affinity for machines (Cynthia and Elena), Cynthia modifies that stance after reflecting on her own technological interests and desires versus the messages she received from parents

and society. Elena views her lack of technological savvy as a choice reinforced by

societal examples.

For all five women, the hands-on versus the black boxed distinction is important.

For example, Amy sees herself as much more mechanically than technologically

inclined.

> I'm more -- way much more mechanically inclined, because . . .it's
> faster, and I don't have to wait for it to get ready. I don't have to plug
> it in. . . it's right there. . . . it's just right there. That's the way I've
> always been, you know. (ln 19-22)

"It's right there" is a concept that figures prominently throughout Amy's interview.

She states it twice in the above response, indicating something she feels confident and

sure of, something that she can rely upon which she feels is under her control. For

Amy, "mechanical" clearly refers to technologies that are tactile and visual, while the

term "technological" is reserved for electronic or more automated machines, including

computers. She perceives the question as an either/or proposition: "Are you more

mechanically or electronically inclined?" Her response is "Probably mechanically,

because I feel I'm in control of something in front of me." The importance of this

distinction may be due partially to the critical role visual and tactile senses play in

Amy's life. Her hearing is severely impaired. While she reads lips and speaks clearly

when communicating face-to-face in the "hearing" world, she communicates face-to-

face with her non-hearing network through sign language. While she trusts

mechanical things she can control with her hands, she mistrusts electronic gadgets that

can do sudden, unexpected things. She gives the example of a can opener to clarify

her preference for mechanical over technological. "I like to use a mechanical one

because I can control it. I don't have to worry about it raring up and cutting me or —

depend on electricity" (ln 15-17).

Amy's fear is two-fold in this example—fear of losing control and fear of harm to

her hands, which are her best means of face-to-face communication in the non-

hearing world. Amy's relationship with technology is complex, and it is in her

responses that we see most clearly that not all technologies are created equal. Even

the hands-on versus black boxed distinction is a slight oversimplification of her

relationship with technology. Before encountering computers, Amy had already

achieved a certain cyborg status by making friends with various "invisible" (black

boxed) hearing-enhancement technologies.

> Of course, I have some technology that I use for my hearing -- you
> know, my hearing impairment -- my hearing aids. And then there's
> closed caption, and that's part of technology I enjoy thoroughly.
> That's something that -- I'm appreciating that part of technology
> because I don't have to worry about running it or setting it up and all
> that. It's there for me. (Amy ln 37-42)

"It's there for me," regarding hearing aids and closed-captioning echoes, "It's right

there," which is what Amy appreciates most about hands-on (mechanical) versus

automated (technological) machines. Despite the fact that she does not control them

as she does mechanical tools, with hearing aids and closed captioning, however, she

also feels comfortable. This seems to contradict her earlier preference for mechanical

versus "technological" technologies, but the key for Amy's level of comfort also seems

to be affected by who performs set-up and maintenance work on a given technology.

When technologies are so automated that they are completely black-boxed, with inner

workings inaccessible, they are easier to integrate because "I don't have to worry about

running it or setting it up and all that." She prefers to interact with hands-on technologies or to rely on technologies that are fully black boxed. Another interpretation is that she likes technologies with which she can interact manually and prefers more complex technologies to be completely automated, requiring no interaction.

For Bonnie the tech/mech distinction is also important and centers on control of another sort. For her, the fear of losing control comes from the seemingly infinite possibilities posed by the broader term, "technological." She speaks carefully, wanting to be accurate, and hesitates to acknowledge even her mechanical abilities initially, responding with, "Maybe slightly mechanic -- mechanically inclined. I don't know about technologically." Once our conversation draws the line between mech and tech, she begins to speak more freely.

> Q    So you see those as kind of two separate things?
>
> A.    I do, yeah.
>
> Q.    So what leads you to believe that you're somewhat
>        mechanically inclined?
>
> A.    Oh, as a kid when things would break and my mom couldn't
>        fix them, I usually could.
>
> Q.    And what makes you consider yourself maybe not necessarily
>        technologically inclined? I mean that's what I was getting from
>        your response.
>
> A.    Well, I don't know, except the word "technology" scares me a
>        little.
>
> Q.    It's kind of all encompassing?
>
> A.    Yeah. Yeah. So I don't -- you know, I can't narrow it down.
>        So I'd just say, well, probably I'm not inclined.

Q.    If I made it more specific, taking one of your [earlier] images
      here of computers, cell phones, if you think of those things as
      technology, are you technologically inclined?

A.    Maybe only slightly, in that I--

Q.    Slightly?

A.    Catch on fairly easily with computers.

Q.    So with -- when it comes to operating technology, you feel
      pretty comfortable? Is that -- or reasonably--

A.    Reasonably comfortable. I don't fear it. I think it's something
      I can learn. (ln 10-31)

For Bonnie, as well, the tech/mech distinction is clear, and she feels it is important not

to overstate her abilities with technology. She does not hesitate to say she is

mechanically inclined and is more hesitant to say she is technologically inclined.

Bonnie is willing to include computers but not all things technological in her realm of

competence.

   In contrast to Bonnie's more careful responses, Elena's are terse and definite. To

the query about mechanical/technical "inclination" she responds with a clear,

straightforward, "No." When asked why this is so, she responds with, "Because I have

never set my spirit to do it" (ln 15), revealing a sense that this is a choice she has made.

When asked who or what influenced her beliefs about this, she acknowledges that

societal factors may have influenced her choice:

A.    I was born in the early 50's, and television portrayed women as
      not . . . having technological savvy. Where else did I get the
      message? From -- people I would generally interact
      with -- technology was something that men dealt with.

Q.    So . . .in your day-to-day interactions with people at large?

A.     Right. If someone was going to -- even -- we're talking mow
       the lawn as far as technology, or fixing the cars or -- my dad
       was a chemistry teacher. And that's where those images came
       from.

Q.     Did your father influence this a lot? Was it more just by
       example and the things he did, or did he say things to you?

A.     No. My dad was real egalitarian. It wasn't Dad. It was -- my
       parents' friends -- I'd go to their home. The things that boys
       did in general that girls didn't do, what they played with or
       their toys. Yeah, their toys were more machines. . .like Tonka.
       (ln 19-32)

Elena grew up with everyday images of men and boys with technology and in the

sciences. No one necessarily made the statement, "Girls shouldn't use technology or

be mechanically inclined." Her father did not attempt to tell her what she could and

could not do. However, the message that technology is a "guy thing" was conveyed

clearly enough through examples.

Cynthia's message about technology being unfeminine was much more overt than

Elena's. Not only did she have examples of what girls should and should not do, but

these examples were reinforced verbally as well.

Q.     Do you consider yourself mechanically or technologically
       inclined?

A.     No, neither.

Q.     Why not?

A.     I didn't grow up that way. I'm 42 years old, and I grew up
       when girls pretty much didn't do those things. You know, it
       was still the dark ages. My father wouldn't teach me even to
       change the oil in my car because he didn't want his little girl to
       do that. So I didn't have the opportunity to even be
       mechanical. Technology, again, was not a field that girls or
       young women went into when I got out of school. They were
       still being teachers and nurses. They were just starting to get
       into the technology phase.

Q.    Who and what has influenced your beliefs about this -- about being -- not being mechanically or technologically inclined?

A.    Well, definitely just my environment I grew up in, is the biggest thing. And my father, of course. But everything around me was that way. Even the courses that we were allowed to take in school -- girls couldn't take shop when I was in school until, I think, my last year or senior year in high school. We had to take home-ec. So my environment just completely shaped that.

Q.    And it wasn't by choice?

A.    Right. You -- well, as a child you just sort of take what's given. Well, I even tried to buck the system. I wanted to take auto mechanics.

Q.    Oh, OK.

A.    They wouldn't let me.

Q.    So maybe you just didn't even have a chance to find out whether you were or weren't--

A.    Exactly.

Q.    Mechanically inclined?

A.    So I believe, and I still do, that I'm not. But I think I probably am. (ln 10-38)

Throughout this section of the interview and especially in her use of "believe" and "think" in this final sentence, Cynthia shows a dual-consciousness about her techno-mechanical abilities. She "believes" what parents, society, and the school system taught her about girls and technology, but she attempted to challenge those beliefs early on by taking auto mechanics. When her attempt to explore and question that belief was squelched, her own belief became more entrenched and her desire to see if it was really true when underground. When given the chance to explore openly, to "think aloud," she sees her desire to learn mechanical activities as evidence that she

"thinks" she is mechanically inclined despite her "belief" otherwise. Perhaps this dual consciousness carries over into her use of the computer as well.

Dale considers herself mechanically and technologically inclined both because of and despite experiences in her childhood. In addition to having a mother whom she refers to as controlling and "abusive" (ln 107), Dale felt hampered by the social construction of technology and gender.

> I do consider myself mechanically and technologically inclined, but culturally those areas were always left to the boys. I grew up in the 50's and 60's. It wasn't feminine to be interested in the mechanism of transistor radios and stereo equipment. Girls' interests were clearly spelled out in my family and social connections. However, I had two older brothers. They liked me to hang around them. I was accepted because I didn't rat on their exploits. My older brother took everything apart to see how it worked. I watched him for hours. My other brother was an artist and drew everything. Neither of those areas was encouraged for me to explore, so I didn't dare.
>
> But I did see within myself at a very early age that I could figure things out, how they were put together and how they functioned. I learned to sew at age 11 and it had to keep my sewing machine unclogged of thread, oiled, etc. I learned to fit things together from sewing patterns and working with my sewing machine. I also learned to type on a manual and had to keep it oiled and the keys untangled. (ln 11-25)

Dale feels she is naturally mechanically inclined sees her aptitude with machines carefully circumscribed social and family rules. Initially, neither Cynthia nor Elena sees herself as having mechanical or technological aptitude. Like Dale, they attribute those limitations to social influences (parents, etc.) or lack of personal interest rather than seeing themselves as inherently unable to cope with machines.

Stage 0 provides context for each woman's feelings about her relationship to technology in general before computer technology entered her life. When the question about inclination was posed, the women in this study clearly mixed the inclination and

aptitude while they chose to separate technological and mechanical. The tech/mech distinction made by four of the five women in this study along with four of the women seeing themselves as potentially mechanically inclined speaks to issues of control and mastery. This distinction raises another question. Is there a certain level of control and mastery necessary for each woman in this study to consider herself "technologically savvy" or savvy enough when it comes to computers? Also, what is the connection between inclination toward and aptitude with technologies? More study is needed.

## Stage 1—Technology Knocks: Enter the "Fearful Box"

*It was deemed that every teacher would have a computer in the classroom. So it showed up and was put on my desk. I didn't -- you know, I didn't know the first thing.. . .Cynthia (ln 66-68).*

Stage 1 is where the technological imperative disturbs equilibrium for each woman. Initial responses range from curiosity to anxiety to panic. Regardless of the beliefs about their technological skills that they internalized as children, in adulthood, these women discover mid-career that technology is knocking via an external force. They sense that they must open the door. The question arises, "Am I fully functioning adequately as a teacher or student without this technology?" The answer appears to be no and requires a reaction. Their identity and sense wholeness (integrity) comes into question in something like the following internal monologue: *"I've come this far in life without the machine. Do I really need it to do my job? Am I technically*

*inclined enough to be using this? What do they expect me to do with this? I'm not sure what I'm*

*supposed to do with this."*

The classic situation is best illustrated by Cynthia's introduction to the machine.

For her the computer evoked the image of a "fearful box" (ln 50). Technology didn't

even "knock" at the door. It simply appeared on her desk, unplugged. When asked

what her first experience with a computer was like, Cynthia responded,

> Oh, God. I had -- honest to God truth -- I had to call the computer
> teacher to ask her how to turn it on. I didn't know how to turn the
> damned thing on. We were given computers at school. Just for some
> reason there was money, and it was deemed that every teacher would
> have a computer in the classroom. So it showed up and was put on
> my desk. No one was there to hook it up. I didn't -- you know, I
> didn't know the first thing. (ln 63-68)

The black box (unquestioned assumption) of the technological imperative says:

Technology = good; Funding = good, Funding for Technology = good. *"Given this*

*formula, you, Teacher, will see that these self-evident truths are manifest. We have given you the*

*miracle of technology. Go forth and be a more efficient and effective educator."* Unfortunately, her

experience is not at all unusual, as noted in Hawisher and Selfe and the discussion of

the "Masquerade" article in Chapter 1.

Cynthia's case from a machine perspective (with thanks and apologies to Bruno

Latour) might appear as follows:

> I've been placed on her desk in a box. Whatever external forces of
> perception and funding brought me here, my purpose is to extend her
> abilities and efficiency and help her build and maintain a network of
> connections. The circumstances in which I've been placed here make
> it hard for me to come across that way. I've been thrust upon her, and
> since I'm only a machine at this point, only a box in a box, then what
> can I do? It will be up to her what our relationship becomes because I
> cannot control the environmental variables that put me here, and I
> cannot speak to her until she turns me on. Even then, my voice is

> limited to the programming and software I've been given, which
> constrain my possible responses to her inputs. (*Aramis* cf)

Cynthia initially perceives the box on her desk as a threat and a source of frustration, but the computer is dependent upon her. She feels controlled by it via the technological imperative that placed it on her desk, but it can do nothing without her. Cynthia's statement, "I didn't know how to turn the damned thing on," is echoed by Elena's "I thought if I pushed any button, something was going to go screwy" (ln 59-60). Until the women choose to engage in a relationship with the "fearful box," the computer simply remains a box, which might just as well be empty. Of course, the choice to engage does not feel like a choice because of the technological imperative's overwhelming strength. The economic and social pressures are strong. For Cynthia, a minimum, fear of job loss and fear of embarrassment among peers and with students are at stake.

Elena's technological imperative came in the form of a gender and communication course when she returned to college in her forties to earn a master's degree.

> Q.   When and how did you first learn how to use a computer?
>
> A.   I'd say that I really first . . .began to . . . use the computer was
>      when [female professor] forced me to . . .We had to use a
>      search the net for concepts, which I'd never done. And we had
>      to use e-mail, which I'd never done.
>
> Q.   So that must have been quite an experience for you.
>
> A.   I was freaked out. (ln 62-71)

This experience was frightening but also motivating, perhaps because Elena was learning to use the computer in the context of her chosen field of study.

In Bonnie's case, there was a specific purpose behind the imperative. It came from her boss, and the goal was data entry into a canned program. Bonnie's first introduction to computers came several years before when she took a programming class with a co-worker who didn't want to take it alone Her motives were curiosity and a desire to be supportive of anxious friend.

Amy's first experiences with computers were quite positive. She is the youngest of the interviewees, so she experienced computers at an earlier age than the others. Amy enjoyed science when in high school, which was her first arena of experience with the intimate machine. Her enthusiasm for the novelty, the efficiency, and convenience of computers as a replacement for books and typewriters is evident.

> A.      My first experience was science. I grew up loving science, and
> science -- it had computers. I think I was in high
> school -- freshman year in high school -- when I was first
> introduced. At first I was excited. I was excited because I got
> to do something different than books, the standard books and
> paper. We did test questions on there [the computer]. We
> read our unit material on that. . .It made it a lot more fun and
> quicker. Saved a lot of money on paper, too. It was
> using -- we were using Commodores, those old dinosaurs that
> we call them now. But, to me, it was just, wow, you know. It
> was like -- it was much better than a typewriter, or it was much
> better than a book. It's all right there. (Amy ln 81–90)

"It's all right there" as a response to the computer being a replacement for books, paper, and typewriter echoes her enthusiasm for hand-operated over electronic can openers in Stage 0. Apparently, "right there," means feeling in control and reasonably comfortable, so equilibrium is not disturbed for her at this point.

## Stage 2—Learning Hurts: Pedagogy as Pain

*"Just show me how to use the damned thing instead of showing me how much you know" (Amy).*

In Stage 2, first attempts to master the machine fail partially due to unsuccessful

learning experiences. This coil of the spring can be repeated many times, varying from

woman to woman. The pedagogical assumption behind early classroom experiences

are that learners should be fascinated with the technology for its own sake and if they

really want to learn will catch on quickly with little guidance. To that end, so giving

them background, theory, and lecturing to them about intricacies of hardware and

software is expected to be an appropriate basis for independent learning inside and

outside the classroom. Those who catch on easily are allowed to set the pace and to

dominate classroom discussion and hands-on learning that takes place in the

computing classroom. Unfortunately, the women interviewed in this study did not

experience teaching based on these assumptions as helpful. Thus, their first attempts

to re-establish equilibrium in the face of the imbalance created by technology's knock

are unsuccessful. Negative classroom experiences have the effect of squelching

natural curiosity and exacerbating or creating anxiety, frustration, and self-doubt.

Despite her positive response to her initial exposure to the computer (see lines 79-

86 of transcript A, also quoted in Stage 1), in her next sentence (beginning on line 86),

Amy reveals when the trouble started—during a programming class.

> And I started hating it when I was forced to take a computer class in
> high school. And learning what it takes to create a program just turned
> me off. And I thought that's what I would have to do more to get the
> access to the computer that I, you know, was hoping for. And it just
> turned me off. It was too scien -- it was too mathematics -- too much
> math. And I'm not very strong on math. And it turned me off. And,

also, I remember when the guys were using the -- when we, the class, were using the computer labs, one thing that made me mad was all the guys would take over and not let the girls take -- and the science teacher didn't work with the girls as much, because I felt that we were second class by this one teacher, and that turned me off. I thought, oh, this is just a bunch of -- it was something for guys to do because they knew -- you know, a guy can build cars. They can put car parts together. I thought, well, computer programming -- well, big deal. I'm not interested in putting programs together like guys would be. You know, I just -- I wasn't interested in it. I just lost interest right there because nobody would help me. So -- and I said, well, if that's the way it's gonna be, then forget it. (ln 90-106)

Amy's repetition of "and it just turned me off" speaks volumes. The turning point is clear for her. Amy wanted to know more about computers but felt she was "forced" to take a programming class, which "turned her off" (just as a machine can be turned off), transforming the computer into a fearful box where it had not been before. In this passage, a number of pedagogical assumptions appear to work against Amy's learning process along with some defensiveness on her part. She experiences anxiety in response to programming, a class she was "forced" to take. She expresses an interest in getting more access to the computer via programming, yet she feels inadequate to the math required, feels she is treated as a second-class citizen by the male science teacher, and eventually dismisses programming as "something for guys to do." On one hand, she suggests she was not interested because programming is a male activity, but eventually she adds that she lost interest "because nobody would help me." Many tensions exist in the classroom for Amy at this point, and her experience of computers has shifted from open and positive ("it's all right there") to closed and negative ("nobody would help me. . .if that's the way it's gonna be, then forget it"). These negative experiences are repeated and exacerbated in college for

Amy, so she avoids computers as much as possible after that. In response to a follow-up question on why she refuses to take another computer class "to this day," Amy says that such classes as are a source of frustration and a waste of time and money.

The "learning hurts" convolution of the cyborg feedback spiral eventually contributes to Amy's recognition that she needs something more to trust and interact with this machine on a daily basis. But initially, it paralyses her. The initial learning experience is ineffective, even damaging, and the need to come to terms with the "fearful box" remains. She avoids the intimate machine for awhile, but the technological imperative strikes again—first when Amy attends graduate school, and again when she enters the world of work.

For Bonnie, classroom experiences were also ineffective. She felt a natural curiosity and a desire to be able to do her job more efficiently but found classes extremely de-motivating.

Q.     What was your first experience with a computer like?

A.     Frustrating. Very frustrating.

Q.     When and how did you first really learn to use a computer?

A.     Well, it must've been--time goes so fast. . .ten years ago, maybe. . . And it was in the resource room at XX School in XX School District. Actually, we had gone to a workshop, and they had this man get up there, and he talked so fast, and he went through millions and millions of things and then told us that now we knew everything, and we could go back to our schools and operate this computer.

     (laughter)

Q.     Oh, well!

A.     So after we got back to the school, I could still practically do nothing. Maybe turn it off and on. That's about it. (ln 57-70)

Bonnie's sense of humor about the situation served her well, along with a sense

that the problem was not a lack on her part but something missing from the design of

the course itself. The memory of this class eventually causes her to recall an earlier

programming class she took.

> Q.    What questions and concerns did you have at that time?
>
> A.    The questions and the concerns were what did you do after
>        you turned it on? What was the next step? I mean I really
>        didn't even know that much, you know. I had -- I had
>        taken -- can I back up a minute here, if it's OK?
>
> Q.    Yeah.
>
> A.    Actually, before this -- oh, maybe five years before this, I had
>        taken a class in computer programming. But we didn't really
>        learn that much about the machines, other than turning them
>        off and on. . .It was more graphics. In fact, the whole thing
>        was graphics. So I maybe learned how to plot graphs and
>        make, you know, pictures of things. But I didn't really learn
>        anything about word processing or any other aspect of the
>        computer. (ln 71-82)

This programming course was not necessarily frustrating for Bonnie, but

apparently it didn't "take" because the applicability of plotting graphs and making

pictures to her job was not apparent. Lack of context for the skills she was learning

caused her to drop what she had learned because it did not seem useful. After this

recollection, Bonnie returns to the story of the classroom experience with which she

began.

> A    So when it came to what they were asking of us. . .to do a
>        canned program. . .we -- had to know how to pull up all these
>        things out of the program, and actually what -- if you knew
>        how to do that, it wouldn't be so hard, because you were just
>        plugging in blanks. But I had no idea how to pull up the
>        program or get one step from the next or anything like that.
>        So--

Q.     And that was because this man--

A.     Went way too fast, and nobody in the whole group understood
       it.  Everybody was just looking at one another, like, huh?
       Right.  Shrugging their shoulders.  They didn't get it at all,
       either.  Nor did my boss, who was with me, understand it in
       the least.  Of course, she was expecting me to. . . . (ln 83-94)

Dale had a similar experience to Bonnie in the sense that her first computer class

just "didn't take."

       In '83 I attended Reed College for a year and a half, majoring in
       Classical Greek history and language.  All language students had to
       take Natural Science, which included a computer course.  Because of
       my dyslexia, I had difficulty being introduced into the system of
       computers so my husband Rick was allowed to attend lab with me and
       assist me.  As long as I logged onto their modem so many hours per
       week, doing the exercises and then completing the paper, they didn't
       care if he tutored me. . .I got an A in the course but really didn't learn
       anything that I could relate to, so I just reverted back to my IBM
       Selectric.  I was a secretary for years and it seemed like home, familiar.
       The computer was too foreign. (ln 61-72)

Elena was did not experience Stage 2 because she never attended any computer

classes.  When asked what would have helped her  learn, Elena's first response is, "If I

had. . . more girlfriends with computers who knew what was going on" (ln 111-112).

Many lines later, she adds, "A class would have helped me learn.  But I didn't have

time for classes at that point" (ln 116-117).  Given the negative classroom experiences

of other respondents, it is entirely possible that missing out on classroom instruction

did not impede Elena's learning process.

The classroom experiences of the women in this study proved painful and

frustrating at worst and unhelpful or irrelevant at best.  Those who experienced Stage

2 found that some other type of learning situation was going to be necessary before

successfully incorporating the machine into work life. The original technological

imperative each woman faced in Stage 1 remained in play, creating additional stress for organism and machine (woman and computer) in the wake of these negative classroom experiences. Thus, Stage 2: Learning Hurts, creates an impetus for Stage 3: Coaching Helps.

## Stage 3—Pain Motivates/Coaching Helps: Competence in Connection

The output from Stage 2: Learning Hurts becomes the input for Stage 3: Pain Motivates/Coaching Helps. In this fourth convolution of the spiral women decide how to respond to the classroom learning models available, which, far from helpful, have caused them to hit the proverbial wall. Tinkering with the machine, asking questions of coworkers, and seeking out guides, are responses to the realization, "If I'm going to learn to use the computer well, I need something more." In Stage 3, a sense of connecting to the machine comes through connecting with others.

For Dale, the coaching came without her request from a source she hinted at in Stage 2, when mentioning the assistance she received in her first computing class. Dale perceived this first class as an external requirement unrelated to her work or intellectual interests, so she literally abandoned the computer for the next ten years.

> The change came, and none too soon, while attending Marylhurst in
> '93. (It took fourteen years to complete my BA, raising five kids (His
> and mine) and working. Anyway, I was going to school, my last year,
> full time and working full time in a management position. I was
> incredibly organized and reached a point when my husband noticed
> one day while I was sitting on the floor in the living room, cutting and
> taping strips of things I had written together. It made about a five-
> foot scroll.

He asked what I was doing and I naively told him that this was how I constructed all of my papers: hand writing some things, clipping quotes, typing some things, and pasting in class notes. He had no idea that I worked this way because I did it all mostly after he had gone to bed. He told me that I just had to learn to type and edit on the computer. So I agreed to spend fifteen minutes a day doing whatever he instructed me.

Within a few days, I was spending more and more time learning Works and loving it. It was finally my time. And by '93, computers were easier to understand, much more user friendly. I kept my last long scroll of taped together pieces of yellow and white paper. I never used the typewriter again for papers, but continued to use it in my office for correspondence to residents. It was easier to stay in a familiar pattern.

Our company did, however, have to put our accounting system on a program that each manager had to learn and because I had spent the previous year typing my papers, I learned it quickly. Two managers left and refused to learn. Learning that program translated easily for me when I left the corporate life and needed to manage the books for my husband's company while attending grad. school.

Incorporating technology into my life has simplified it. I couldn't have made the transitions that I have made and at such a rapid pace over the past six years without the computer. I just couldn't have been done. I readily admit, my husband and soul mate has been the person behind the scenes encouraging and teaching me. (ln 73-100)

Dale's re-introduction to the machine arrived like a second technological imperative (her husband Rick was insistent because he knew the computer could help her). Perhaps because the source of the imperative was someone she loved and trusted and because the way the computer could assist her with her work was so clear, she was able to retain these lessons. Coaching plus context provided Dale with what she needed to begin seeing the relevance of the computer in her life. Thus, achieving competence through connection prepare her for the next stage of development in her relationship with the intimate machine.

For Amy, before the coaching could help, the pain of previous unsuccessful

learning experiences. Not only did Amy feel frustration with the classes she took, but

she felt paralysis about asking for more help.

> When I first started working. . .I thought there was nobody there to
> help, and I couldn't -- I felt like I couldn't talk about [the fact] that I
> needed help with computers. And the school district offered classes,
> and I felt like it wasn't enough, that I didn't know how to ask for
> more. . . And I felt so behind. And I had this huge need -- I wanted to
> get onto that computer bandwagon to help me do my job because I
> had to do all these reports. . . I wanted to get with it. I realized, you
> know. . . for the first time, I better learn this time. And so -- and I
> thought there's only just one person. There's me. And I -- I want
> some -- I want something done easier for me, too. And I think that
> finally pushed me.

A sense of her own tremendous need to do work more efficiently and a growing

awareness of how the computer could help her caused Amy to spend time tinkering

on her own, and when that proved insufficient, she sought the help she needed in co-

workers. Overcoming a feeling of being too far behind to be helped was an essential

ingredient of getting the help she needed. Amy's ability to use the computer emerged

from a combination of her own tinkering with the Macintosh, a more visual interface

which seemed more user-friendly to her than the pre-Windows IBM PC, and receiving

coaching from friends and co-workers:

> A.    Somehow I was able to find help on how to do certain things
> through certain people.
>
> Q.    Colleagues, co-workers, or--
>
> A.    Co-workers would help me. Some people from the computer
> department would come in and help me fix the problem.
> (ln 192-196)

Bonnie wanted to be as competent, efficient, and productive as she could as soon as possible and not "waste time" tinkering with the machine. First, her tinkering was made much more productive when she had access to written step-by-step directions.

Q. And in that process who or what helped you find out what you needed to know?

A. The management team realized after they had gone through this futile attempt to teach us computers in that manner that it just didn't work at all. So someone down at the district office who was familiar with . . .this program, decided to write up directions to follow. And actually I was beginning to learn from that, just by following each specific direction and going through it on the computer as I did. That's how I began to learn.

Q. Kind of a step-by-step--

A. Kind of a step-by-process. (ln 99-109)

In addition to the step-by step instructions, Bonnie found coaching the most helpful of all to her learning process.

Q. Was there anything else that you can remember, in addition to this book of procedures that kind of helped?

A. The thing that helped me the very most was one of the instructors from the junior high -- a computer instructor -- came down, and he said, "The only way you're going to learn -- really learn this program, is to do it."

Q. To use it?

A. Yeah. "Is to do it yourself. And so I'm here to run you through this program. You sit at the computer, and I'm going to tell you step-by-step what to do." And when that happened and we went through from the beginning to the end, putting in IEP . . .in the computer, that's when it really sank in and became easy for me. And along the way he also gave me a lot of shortcuts and things to use to get into various programs back and forth. And I took notes, of course, and that type of thing. And that helped more than anything.

Q.    So the--

A.    And once that happened, I felt -- finally felt a little bit
      comfortable with it.  And then it was just a matter of using the
      program enough times to be really comfortable with it.

Q.    So you felt like you had something that you could kind of
      retain and build on. . .

A.    Right.  So I'd say the tutorial and then the actual hands-on with
      a teacher or coordinator -- whatever you want to call--

Q.    Yeah.  Sort of a guide?

A.    A guide--

Q.    Or a coach, maybe?

A.    Is a good word -- coach, yeah. (ln 128-154)

Once she was able to establish a certain level of comfort with the machine, after a

combination of written instructions and interactive coaching, Bonnie developed a base

of knowledge on which she could build independently.  Bonnie eventually completed

the loop of competence through connection when she took on the role of

mentor/coach. job When the time came, in preparation for her own retirement,

Bonnie taught the woman who would replace her how to do the computer-related

portion of her job.  Bonnie was able to give this woman the kind of help Bonnie

herself would have liked from the beginning.

Bonnie's experiences and those of the other women in this study show the

frustration of tinkering without a context and the benefit of connection in learning to

use computers.  Once a certain level of context is established through the human

connection, tinkering can become more productive.  For the four women who had

negative classroom experiences, the solution to pedagogical pain was a combination of

coaching (one-on-one instruction and guidance) and contextual tinkering. Elena, the one respondent who had not taken a computer class and therefore did not experience "learning hurts" in the same way as the others also benefited from coaching and contextual tinkering. All five women found tinkering to be helpful once they had established sufficient context to do so productively, so they were tinkering toward something. Without context or guidance, they found tinkering to be an extremely inefficient way to learn. None of the women in this study felt they had time to tinker for the sake of tinkering. The difference in how connection with computers takes place is critical.

## Stage 4—Beyond Mastery: Intimacy with/through the Machine

In stage 4, women find a sense of connection to others and self comes through connection with the machine, through computer-mediated communication (CMC). Each woman experiences a personal connection to friends, family, self, or work (work she cares about deeply) through CMC. First they chose learn to use the machine because they didn't want to be behind (fear), now they find they also use the machine because they love it for all the connections they can make—connections to self/work (research--health issues, writing, journaling) and to people. When fear of the tool is overcome, love of the machine as part of self occurs. Integration occurs. Being able to use the machine as a tool for accomplishing tasks is fine, but what keeps the women coming back, what causes their eyes to light up with enthusiasm is the connection to self and others.

For Dale, the integration comes through in her writing in response to the question, "What does the term 'computer' mean to you?" she writes of the computer's shift in meaning from "challenge" to "an extension of my own brain" (ln 118-119). She also sees it as an extending her ability to communicate with her personal network of connections, partly based on sense of immediacy.

> It allows me to communicate with friends, family, colleagues, and other contacts almost instantly which speeds up processing work and communications. I still write letters, but communication doesn't have time to get "cold." So thoughts can be conveyed rapidly, then response can be almost immediate, etc. allowing for a different kind of communication than letters. (ln 121-126)

This sense of immediacy seems to contribute to an extension of self, allowing Dale to explore different aspects of her personality through e-mail communication:

> I somewhat take on a different persona at the keyboard. I'm bolder, more confrontative/assertive, I don't let people get away with remarks that I might let slide in person, remarks that wouldn't show up in letters. I'm more poetic in letters and more humorous, scholarly, business-like, encouraging....just different at the keyboard. Others have noticed it.

> I'm more extroverted, that's what it is. I'm an introvert, but really a closet extrovert. . .or a balance between both ways of being. The keyboard draws that extroversion out of me...letters don't. So I guess that I would say that the computer accesses or taps into an alter ego, extroverted way of experiencing the world and relationships in general. (ln 126-136)

Cynthia see the e-mail as an extension of her personality as well. She considers herself a shy person, and sees e-mail as a safer form of communication than face-to-face or phone conversation.

Q.     Does e-mail bring people closer in some ways?

A.     Oh, yeah. . . I will say things in an e-mail, you know, just being silly, that I wouldn't say to your face. . .because I'm not there. You're not seeing me. It's easy to say something maybe a little

risqué or just something that I'd be uncomfortable with
looking at you and saying.

Q.      And so you think that brings people closer in a sense?

A.      It can.

Q.      Because maybe a certain wall is removed?

A.      Yeah. Like a shy person, which, honest to God, you wouldn't
        think it, but I really am. I -- you know, there are things that I
        just couldn't say personally, but I could put it in writing and
        send it. And that gives you more insight into who I am. Yeah,
        I think it can really break down the walls. (ln 851-857)

And for Dale, through her work as a writer, the machine connects her more deeply

to her own imagination and creativity:

> It ["computer"] has taken on an almost sacred meaning as far as its
> value and reliability as I go to it daily and it assists me to develop and
> produce my work. It assists my imagination. Because it processes so
> fast, I can type faster on the computer than a typewriter and so
> spontaneous insight and creative adventures come alive at the
> keyboard. I wrote my first fairy tale last year and the computer made it
> happen. (ln 137-142)

Amy also experience a connection to self through writing. For her, journaling at

the keyboard became cathartic. Another turning point for Amy came as a result of her

best and worst experiences with a computer. Her worst experiences led to

determination, which led to her best experiences. First, her work situation became

desperate enough that she finally realized she didn't have a choice, as mentioned in

Stage 3. She also felt pressure from deaf friends who had made the switch from TTY

to e-mail for remote communication. What Amy experienced while isolated from her

friends and dealing with the emotions brought about by her parents' divorce caused

her to connect to the machine in a much more personal way.

And I -- sometime back when I was still living up in Washington, and I did a diary. I went through kind of a counseling period of my life where I was kind of in terms of my parents' divorce. And there were some emotional healing that needed to be taking place, because I finally moved away from home for the first time. And I wanted so much to have a diary. But I just couldn't pick up the paper because it was just too much to write. Then I'd have to erase. But on the computer I could type so much faster, get my thoughts out much faster.

. . .

I would get to where I'd lean against the wall. . . and then I . . would never have enough energy to write, because I didn't have a clear -- I couldn't put it on paper. But somehow I wanted to learn just so I wanted to show it to somebody what I was experiencing. And one night I finally did. I got up. Even though I was deadly tired, I went to the computer, and I just poured everything out. I was able to explain that type of experience. And I tell you, it was just amazing how fast I could type it out and how it came so clearly on the screen.

I was actually able to look back and go, wow, you know, and I could take it my counselor and say, "This is what I've experienced. This is how I can explain it." A lot of times I have a hard time explaining. . . so -- I get so emotionally choked up talking about it. And then I said, "This is what I experience during the crying jags." And she was, like, whoa. So she had a clearer picture of what was happening to me and, you know, she encouraged me to do more of this kind of writing. And it was -- it was a time that I actually looked forward to, because it was late at night. It was my -- you know, I'd write better. I'd think better, more clearly, more personally maybe at night because it's more quiet. And I love doing that. (ln 563-595)

Q.    So there was something about the keyboard. . .

A.    The keyboard itself had a way of expressing. It was an outlet. It wasn't -- I still have the copies which, you know, I look back, go wow, you know. I'm glad I did that because I could see how much my life has changed. But it was just a such a way I could express myself and was just a wonderful way of doing it. Much better than paper -- paper and pencil. It was such a powerful tool for me because I could get it out, and I could look and see. It was like a mirror for me. And I needed to do it instantly, the minute I felt something, I could type, because I am more of a mechanical person rather than writing. And then I'm faster at typing and signing, but it's only two fingers can

move, and my thought process is more slower. And there's a roadblock to get it on paper from pencil because I had to erase it, and did more writing. I did -- I wrote something else. But with the computer I was able to look and see the process of my feelings. (ln 595-609)

Amy's relationship with the computer also deepened when she learned about e-mail. Like her journaling experience, E-mail helped Amy restore equilibrium during a time when she was isolated from friends and family. E-mail had replaced TTY as the preferred long-distance communication medium amongst Amy's inner circle, leaving her isolated from friends and family. E-mail turned out to be Amy's best and worst experience with a computer.

A. You know, and it was exciting. It was -- oh, I got to e-mail my Mom. I didn't feel like I was alone anymore. And actually, it probably -- it got me more homesick, because I wanted to be with my -- you know, my family. And it was wonderful, because going through TTY on the phone it's so expensive, especially with long distance phone calls. At that time nobody wanted to use this TTY anymore because there was e-mail. Nobody called me anymore. And, you know, the phone never did ring much at my apartment up in Gig Harbor where I was so far away from everybody else. And it was lonely -- very lonely. And then when I got to use e-mail for the first time it was just -- you know, it was just like they were right next door to me. It was just wonderful.

Q. Back in the fold?

A. I mean it was faster. It was easier, and I felt I was in control. And that was when things started turning around for [me with] computers, providing me something that I needed so much in a fast, quick, efficient way. (ln 282-296)

In the case of e-mail, for Amy, the technology that initially separated her from her friends brought her back to them, made it seem like they were "right next door"—giving Amy the feeling of again being in control of her life. This feeling of being in control of her life, clearly marks Amy's return to equilibrium.

Connection to self and others, rather than mastery, turns out not to be the ultimate end of being in relationship with the machine. Once the five women channel their anxieties into achieving a certain degree of comfort with the machine, they transcend the notion of using it merely as a tool. They see the formerly fearful box as meaningful, not outside of them, but part of them. After the machine enters their lives via the technological imperative, the women in this study made adjustments toward equilibrium and integrity rather than mere mastery. Perhaps these women's experiences suggest a new lens through which to view human relationships with computers.

Humans and machines depend upon each other, and as shown in the interviews with these five women, environmental variables that influence human-machine relationship include technological imperatives, in the form of institutional funding, pedagogical assumptions, and human-human relationships. For the women I interviewed, the process became one of befriending the machine rather than controlling it, one of accepting and dealing with the machine's "quirks" in the context of enlisting the machine's help with something inherently worth doing. Befriending the machine enhances human friendships. The desire to feel connected to humans is at first an obstacle and then becomes a path to loving the intimate machine. At first a communication breakdown occurred in classroom instruction, which further alienated these women from the machine; however, that very breakdown created an anxiety, a tension, that fueled these women to press on rather than give up. The machine was "other" until through anxiety, perseverance, and connecting with other humans, these women made it their own.

# Chapter 4: Ethics in the Intimate Machine

*Integer: Having no part lacking; entire.*
*Marked by moral integrity; honest.*

*Integrated: Combined into a whole; united, undivided.*
*Designating or characterized by a personality in which the*
*component elements combine harmoniously. Uniting several*
*components previously regarded as separate.*

*Oxford English Dictionary*

Many narratives about women and technology suggests women/girls need to catch up to men/boys so they can compete in the job market and become designers rather than mere users of this tool that so thoroughly permeates our lives. In these narratives, "Mastery" is a term frequently used to describe the goal of computing. This term poses a difficulty when examining the stories of the women I interviewed. "Mastery" does not seem to fit their narratives of an evolving relationship with the computer. Their responses were not couched in terms of "See what I can make it do?" but rather "See what I can do better with it?" Having a good relationship with the computer came to mean having better relationship with themselves and with the people in their professional and personal lives.

The journeys of the five women in this study gave rise to learning/pedagogy issues and communication/relationship issues —from interactions among organisms, machines, and the environments (systems) in which they find themselves. Machine, organism, and system interact in mutually constitutive ways. The symbol I chose to represent these women's voices is an extended *spiral* ("a progressive increase or decrease, especially one in which two factors each respond to the stimulus provided by

the other") with five coils—from 0 (machine/organism separate) to 4 (machine-human together—cyborg). As witnesses to these women stretching the and passing through convolutions of the spiral (the coils of their individual springs) from unplugged to wired, we can ask what this story might *mean*. By the time they reach Stage 4 of the cyborg feedback model, these women's words suggest that they feel and act differently from anyone interested in mastery of/over the intimate machine. How these women feel and act in the face of the difficult choices the machine poses tells us something about who these women are. The women's behavior in the face of an individual dilemma posed by a cultural imperative discloses something about their "character." Ultimately, the question for these women became, not, "How can I master this new technology?" but "What does my relationship with the machine say about me?"

## Virtue Ethics Distinguished

When character is at issue, we have entered the realm of virtue ethics. A virtue-ethical stance borne of Aristotle's *Nichomachean Ethics* differs from other ethical approaches that are more familiar in the twentieth and twenty-first centuries. Rosalind Hursthouse offers a clear distinction between modern and virtue ethical approaches in the introduction of her recently published book, *On Virtue Ethics*:

> 'Virtue' ethics is a term of art, initially introduced to distinguish an
> approach in normative ethics which emphasized the virtues, or moral
> character, in contrast to an approach which emphasized duties or rules
> (deontology) or one which emphasizes the consequences of actions
> (utilitarianism). (1)

As Hursthouse points out, these three ethical approaches (deontology, utilitarianism, and virtue ethics) need not (perhaps cannot) be perceived as mutually exclusive but as different areas of emphasis (4) which then may be appropriate for any given situation. These women's journeys can be viewed as moves among these three ethical approaches via the stages of the cyborg feedback model.

The women in this study begin at Stage 0, "I'm OK/It's OK," in which no moral choice is required because equilibrium has not yet been disturbed. In Stage 1, "Technology Knocks," the women in this study experience external pressures created by the many-layered technological imperative. They could approach the situation with a utilitarian ethics, stemming from a sense of consequences if they do not respond appropriately to that imperative. In Stage 2, "Learning Hurts," a utilitarian ethical approach could be expressed as "I might lose my job or look stupid if I don't figure this out" (fear of punishment) or "I might get a raise or promotion if I embrace this new technology" (anticipation of reward). A deontologcial (sense of duty) ethical approach might be characterized as follows: "Others are using it, and it is my duty as a teacher, researcher, or assistant to understand what the technology can offer so I'll be more efficient and effective." However, despite the possibility of taking these other two ethical approaches, each woman finds the kind of learning situation she needs in Stage 3 to foster a relationship with the machine based on virtue ethics. A virtue ethical stance is clearly demonstrated in Stage 4, wherein the women in this study connect with the machine for internally motivated reasons.

Ultimately, for the women in this study, connecting with the machine comes not from fear of reprisal or sense of inadequacy as one who has not mastered the tool.

They connect with the machine because they see that in their cyborg role, they have greater means available for enhancing communication (i.e., relationships) with students, friends, family members, and even themselves.  Once they internalize the value of the organism-machine connection (their cyborg self), they can even accept the frustrations (error messages, "bugs," or not knowing exactly how to accomplish a certain task) that inevitably go with being in relationship with the intimate machine. When the machine is no longer just a tool to be mastered but a part of them, they no longer require it to behave exactly as they wish anymore than they expect that of another human being.  The machine has its limitations and its unlooked-for  wonders. It has transformed from mysterious-bad (fearful Pandora's box of terrors) to mysterious-good ("magic" box of possibilities).

According to Aristotle's *Nichomachean Ethics*, an ethics of virtue recognizes that feeling and behavior in response to at any given situation discloses what kind of human beings we are.  Virtue is not a characteristic possessed but human character displayed in action.  In any given situation that requires a moral choice, then, our response (in feeling and action) can be deficient, excessive, or approaching the "mean."  The "mean" is the appropriate response in the context of our own values and the situation in at hand.

What constitutes moral choice?  The moral realm is a "place," a situation, in which human beings are called upon to make choices which disclose something about their character.  When does choice disclose character?  (The more proper question may be whether choice ever fails to disclose character, but such an inquiry is beyond the scope of this study.)  Character is disclosed when a choice made because it is the right thing

to do and the right way to do it according to internal values in a particular situation. This internally motivated choice distinguishes virtue ethics from other kinds of ethics, in which choices are based on some external goal or set of rules laid out by an external authority.

## Meaning and the Mean

Virtuosos of the virtual world would at first seem to be hackers. Virtual has evolved from meaning, "possessed of certain physical virtues or powers; effective in respect of inherent qualities; capable of exerting influence by means of such qualities" (physical and "real") to meaning, "Not physically existing but made by software to appear to do so from the point of view of the program or the user." But if "virtue" is reclaimed in its Aristotelian sense, then "virtual" and, hence, "virtual virtuoso," takes on a entirely new meaning.

In light of virtue ethics, what do these women's journeys mean? This question calls for a return to the cyborg—once a boundary creature akin to Frankenstein's monster, so often an object of horror in science fiction and to those who fear the "intimate machine." The cyborg embodies a balance between the extremes of complete separation from (or paralyzing fear of) the machine and complete mastery over the machine. To borrow a term from Aristotle, perhaps these women in their cyborg selves have found a "mean"—a virtue of appropriate action and feeling in relation to both machines and humans. For example, if there is such a mean, between the extremes of non-relationship and a master-slave relationship with the machine, then there may be a corresponding virtue that mean represents. What virtue can the

cyborg possibly represent? Is it one of Aristotle's virtues, such as courage, or some type of organic-machine hybrid virtue, or is it thing as yet unnamed?

Aristotelian virtue (*arête*, or "excellence") involves performing the right actions at the right time for the right reasons toward a more ultimate sort of end—*eudamon* (the "happy" or "appropriate;" in Latin, *felix*, or "felicitous"). Feeling good about acting virtuously (i.e., not feeling it is a burden to do the right thing) is also part of what makes an action virtuous. Feeling and act are tied together in "right reasons." It is not enough to do the right thing; to be virtuous is to take pleasure in doing it the right way. The tying together of feeling and action is also critical to understanding Aristotle's concept of virtue as choosing the mean, choosing to behave virtuously between the vices of excess and deficiency. Table 4.1 suggests a grid of possible choices in the organic-machine relationship:

## Table 4.1: Virtue = Integration (human-machine interaction)

| | Deficiency | Mean | Excess (machine) Deficiency (human) |
|---|---|---|---|
| **Relationships** | Unplugged/ disconnected from machines and those who do CMC. | Communicative/connected with machine and people. Can communicate with computer as tool for work and for CMC with other humans. | "Jacked-In" (to) machine but tuned out/turned off with people. |
| **Communication** | Fearful of getting behind, doubtful of catching up. Limited communication options. | Interpersonal/connected able to experience intimacy with both machines and people. Variety of communication options (CMC, face-to-face communication, letters, phone) | Communication is about power/control/mastery over code/machine, possibly for sake of power/control/mastery over society that rejected and is now dependent on hackers. |
| **Mode of Action** | Cowardice with machines and therefore with CMC. | Courage/balance with machines/people/CMC. Integration | Fearlessness with machines. Avoidance of people except through .machine mediation. |

When it comes to communication-in-computing, the virtue in question is human-machine integration, which includes feeling and acting with integrity in relationships with human beings and machines. The mean that illustrates this virtue is balanced human-machine integration (cyborg status). The deficiency on this scale is the absence or fear of human-machine relationships. The excess is overdependence upon machines and fear of human relationships.

- **Deficiency:** Unplugged from the machine; therefore, limited in ability to connect with humans as well as machines. Human/machine distinction essential because machine is perceived as threat. Not knowing how to use it makes me feel/look stupid.
- **Mean:** Integrated (human/machine in harmony); machine/human distinction unnecessary, connection with one enhances connection with the other.
- **Excess:** Jacked-In; machine/human distinction clear. Machine is preferred, safer, can be controlled, doesn't degrade or insult you when you screw up, does exactly what you want when you "say the right thing"; hackers valued and non-hacker humans expendable because they don't understand hacker ethics.

A virtue, then, is a place of balance, a mean between two extremes—one of excess and one of deficiency. Behaving virtuously is about not only acting appropriately but having the appropriate feeling when acting. In other words, to be virtuous is to not only do the right thing but to feel good about doing it. For example, courage as a virtue is the mean; it is the balance. The excess of courage is foolhardiness; the deficiency is cowardice. Courage is not just about being brave. It is about not feeling an excess of fear or an excess of confidence in any given situation.

Two powerful Aristotelian terms can help explain virtue ethics and, thereby, amplify the voices of the women in this study—*techné* and *praxis*. According to Joseph Dunne's reading of *Nichomachean Ethics*, *techné* and *praxis* are each to be distinguished from theory, but Dunne shows that, rather than lumping *techné* and *praxis* together as

practical knowledge, Aristotle distinguishes the two in the following way:: *Techné* is

concerned with production (*poiesis*) while *praxis* is concerned with moral practice

(*phronesis*). Dunne clarifies this distinction as follows in *Back to the Rough Ground*:

> Production has to do with making or fabrication; it is activity which is
> designed to bring about, and which terminates in, a product or
> outcome that is separable from it and provides it with its end or *telos*.
> *Praxis*, on the other hand has to do with the conduct of one's life and
> affairs primarily as a citizen of the *polis*; it is activity which may leave no
> separately identifiable outcome behind it and whose end, therefore, is
> realized in the very doing of the activity itself. (We may therefore say
> that while '*praxis* and *prakton* are identical, *poiesis* and *poieton* are
> different.') (*NE* 1140a2-5, Dunne 244)

Thus, *techné* represents externally motivated action focused on an end product separate

from the action. In *techné*, means are means to an end—and therefore separate from

that end. The end provides external motivation, a cause, for activity in the first place.

*Praxis* represents internally motivated action done for the sake of the action itself. In

*praxis*, means are ends—the two are inseparable, integrated. With *techné*, the focus is

on the outcome produced by the action. *Praxis* emphasizes the action, the doing. Put

another way, when we do something because it is good to be doing it we are in *praxis*.

When we do something for the sake of an end product, we are engaging in *techné*. This

distinction is important for the kind of action that accompanies a virtue. Virtue

requires more than *techné*. Virtue requires *praxis*.

The virtue disclosed by the women in this study lies in choices they make

regarding their relationships with both machines and organisms. The mean in such

relationships is communication and connection with both machines and people. When

it came to learning how to do computing the women in this study connected to the

machine when connecting with other human beings. That connection did not take

place in the classroom. It took place as each woman received mentoring and coaching on how to compute in the context of her individual needs. Whether coaching came through coworkers, friends, or family, this one-on-one connection with a human being was the main thing that helped connect them to the machine. The classroom situations the women in this study encountered failed to develop such a connection because they felt ignored or that the material covered was not relevant. The classroom situations, rather then establishing a context for how computers could prove beneficial seemed to assume that they should already inherently value the machine. The teachers failed to establish a context or a value for the machine. Their connection to the machine and their understanding of its value came from a connection with another human being. One-on-one contact (a human connection with a coach or guide) and establishing a meaningful context for their relationship to the machine combined to help them connect to the machine. The connection to the machine in turn helped them connect to humans (friends, family, co-workers, themselves).

People who say things like, "I'm a people person. I just can't connect with machines" can be viewed as "unplugged" or deficient in integration. Computer-mediated communication is another communication option. From a mode of action standpoint, people who are unplugged show cowardice toward machines and in turn cut themselves off from other humans as well, whereas people who are integrated show courage and balance with machines and with people. Unplugged individuals are very tied into making a distinction between humans and machines. Perhaps something about that distinction that makes them feel safe and the idea of crossing the boundary that separate human and machine as cyborgs do frightens them.

The women in this study are at the mean because they have crossed that boundary. They are cyborgs. As cyborgs they have integrated the computer into their lives, into their circle of friends. They are connected in the sense that they can experience intimacy with both machines and people. Through this integration they show balance and courage in both their actions and their feelings toward people and machines. These women do not demonstrate any extremes like an excessive attachment to people at the exclusion of machines or an excessive attachment to machines at the exclusion of people.

People at the excess do demonstrate an excessive attachment to machines at the exclusion of people. For example in his book *Geeks,* Jon Katz argues that people who are more connected to the machine than they are to people may have been rejected by people at some point in their lives. Faced by a lack of control in social interaction, "geeks" remedy these feelings by turning to machines, which cannot reject them. Their relationship with computers is one in which they can have absolute control and mastery, so rejection is no longer a concern. Katz's "geeks" echo Sherry Turkle's "hackers" (from her article "Computational Reticence") in this sense. Katz opens each chapter of Geeks with a "geek voice." In the following example, Kirk sees the Net as an equalizer for those lacking in social skills by helping geeks reach other geeks:

> The Vietnamese geek and the American geek are the same breed,
> containing the same about of personality quirks you outlined in your
> articles. The faceless quality of the Net erases the problems geeks face
> in the 'real' world of image, fashion, communication skills, etc. I
> foresee an International Geek Tribunal emerging through the vast
> slowly connecting networks that are already forming between geeks
> here and geeks there. (Katz 24)

Thus, technology is partially a refuge from the risks of personal relationships. Turkle's "Anthony" illustrates his desire for emotional safety as follows: "Hacking is safe in that you are in complete control of your computer world, and sex and relationships are risky in that the rest of the world has control" ("Reticence" 46). For people at the mean of human-computer interaction (those who practice integration), computers enhance their relationships with human beings and human beings enhance their relationships with the machines. For people like Anthony and Kirk who are at the excess, their relationship with the machine subsumes their relationship with people. The negative input that they get from other people starts a chain reaction in which they turn to the machine for a sense of power and control. This, in turn, further alienates them from other people.

Just as people display their character in their interactions with other people, people disclose something about their character in the way they behave with machines. Those who are deficient display an inability to cope with change. The machine represents a threat that they do not want to face so they reject it and presume to embrace people. People at the excess display an inability to cope with the world of human interaction so they embrace the machine and presume to reject people. At the mean, the integrated women in this study choose to accept change and ultimately embrace a connection with both machine and people. Integrated people can accept both the link and the distinction between humans and machines. The women in this study, for example, display a willingness to transgress human-machine boundaries that existed before they met the intimate machine.

Those at the deficiency fear two things. One, that there is something wrong with getting too close to machines and, two, a fear that they cannot master the machine. Part of the disconnect with the machine is that they view it with mastery. Partly they are afraid to try and partly the concept of mastery does not appeal to them. The image that is so often portrayed of mastery is that women need to master the computer they are thinking that in order to have a relationship with the machine they must be like the people at the excess. To the deficient, mastery of the machines calls for dedication to the machine above all. Excessives see the machine as a tool to be mastered. That mastery helps them master the inadequacy they feel in their ability to "master" human relationships. For the excessives, as for the deficients, the machine is a means to an end. For both extremes the relationship with the machine is governed by *techné*, a means to an end.

In the middle of the spectrum, those who are integrated see means and ends as united. Their view of the machine is from the perspective of *praxis*. The women in this study found the ability to accept and cope with change. Regardless of their initial feelings about the change, each accepted the change introduced into their lives by the technological imperative. Although the women in this study felt initial anxiety, unlike the deficients they did not the anxiety paralyze them. The integrated are not just invested in using the computer as a tool to achieve a certain end (mastery); they want to compute in ways that are meaningful to them. They allow the machine to bring them closer to humans and allow humans to bring them closer to the machine; this integration in action—*praxis* in computing. *Praxis* in computing enables these women to determine (or at least view differently) their place in the larger system.

Integration is the ability to recognize and choose well among the available means of communication in any given case (face-to-face communication, phone, e-mail, etc.) For the women in this study, integration is not cutting themselves off from computing as communication just because someone or something taught them that technology wasn't feminine or they weren't good at using technology, or that having a relationship with computers is taboo because they aren't human. Integration is embracing their cyborg selves rather than taking an extreme or the deficient approach to computing. That is ultimately what the women in this study women do. In the face of the her own Technological Imperative (social, economic, or otherwise), each woman initially experienced anxiety and frustration, which are natural in the face of something new that does not seem to fit with ones' value system. However, these women allowed those feelings to motivate them first to *techné*, computing for external reasons such as keeping a job or doing well in a class. Once a certain level of competence/comfort was achieved, each woman found an internal reason to work with computers—enhancing relationships for the sake of the relationship—be it relationship to self (e.g., Dale composing her first fairy tale, Amy journaling in a more connected way, or just feeling more confident as a teacher, student, or assistant), relationship with others (all report enhanced relationships with family and friends via e-mail), or relationship with the machine (instead of fearing it or dreading working with it, all women are excited about its possibilities and appreciative of how it has enhanced their lives).

## Courage, Intimacy, or A Thing As Yet Unnamed?

The women I interviewed each have an interesting and contradictory relationship to the machine that expresses itself in learning and communication situations. On the one hand, they view it as just a tool, a cold piece of machinery. On the other, they fear error messages and loss of data, results of not knowing how to communicate with the machine. They love the connectedness with friends and family they experience through e-mail, and they hate it when there are server problems and e-mail gets delayed. They enjoy the sense of getting the computer to do what they want when they succeed learning to use a new software program, yet four out of five are quite adamant about the silliness of naming their computers— "It's just a machine." It can be "just a tool" (a thing that helps me get a job done more efficiently once I know how to use it) or "an extension of myself" (like a prosthesis or an enhancement that empowers me to do something I care about even better). Sherry Turkle, in "Computational Reticence: Why Women Fear the Intimate Machine" suggests that women in programming courses fear not using the machine *per se* but crossing that human-machine division into a kind of intimacy.

These women fear their incompetence with the machine, "I might screw something up," but feel empowered by the connectedness they feel to their own creativity when composing on the computer, and all five women spoke with joy of their connectedness to friends and family via e-mail, as well. The notion of intimacy with the machine itself was distasteful, however. When young women taking programming courses in Turkle's article catch themselves connecting with the

machine, anthropomorphizing it, they feel uncomfortable and pull back. Initially the women I interviewed needed that machine-human distinction and did not feel safe when they catch themselves crossing the boundary. This seems similar to feminist and Freudian notions of why many men seem to fear intimacy with women; whether because they are crossing the human/nature separation or fear losing their individual selves by being re-absorbed into the womb. It is possible that men fear being assimilated by women (nature, etc.) and women fear being assimilated by machines. If the machine is just a tool, it is a safe thing—not unlike men seeing woman as a tool for pleasure rather than connecting with her "For woman is traditionally a use-value for man, an exchange value among men; in other words, a commodity" (Irigaray 31). The journey of the five women in this study is in part a journey toward treating the computer as more than a commodity and computing as more than a set of skills.

That is the process of transforming *techné* into *praxis*. The initial anxiety in the face of an external imperative to adopt a *techné* acts as a catalyst. These are not women who will embrace something new just because they are told, "This is something you must use," but given no context in which it relates to their lives and values. The anxiety they feel is at first a type of resistance to something that appears to threaten the value of connection—communication and relationship. The computer seems alienating partly because of the message women have been given about their relationship to technology and partly because the models of what it means to be a virtual virtuoso are hackers who seem to have an affinity for machines and an anti-relational ethics when it comes to human. At first, it seems as though the women must give up relationship and connectedness with humans in order to connect with the machine. It seems as

though the only ones who connect with the machine are those who prefer not to be connected to humans.

The journey is one of integration—can those humans who value relationships make this "thing" part of their value system? Can they behave in an integrated fashion with the machine? The women I interviewed want to be good teachers, friends, mothers, citizens, lovers. The question the technological imperative raises for them is a moral one: How can *eudamonia* (happiness, appropriateness) be practiced with a machine that has been placed on my desk with no instructions? The women in this study, in the course of coming to terms with the technological imperative, ask themselves, "Is it possible to be a connected, communicative, relationship-valuing human being with this computer, perhaps even moreso than without it?" For Amy, Bonnie, Cythia, Dale, and Elena, the answer is, "Yes." Once they embrace the intimate machine, integrate it—woman and machine (cyborg) are more than the sum of their separate selves . To embrace the machine is not to reject humans but to reach out to others and ourselves in yet another way. Integration is about holding onto personal values when confronted with a new situation, including a new relationship—with machines, people, or any form of life. Cyborg integration is the human-machine connection. When the women in this study connect with the intimate machine successfully, they connect with other humans and themselves successfully as well.

What is a cyborg, and how can it serve as a positive image for women? A cyborg is a combination of human and machine—the two working together to form a powerful Donna Haraway sees all humans cyborgs because of our intimacy with

machines. Humans do not simply depend on computers (and cell phones and cars and other technologies) as tools for accomplishing tasks or as means to earn a living; our technologies are a part of us and shape our lives, our personalities, our relationships with ourselves and other beings. Haraway's point is that we don't have to reject technology and become earth mothers and goddesses to be feminists. If the virtue of "integration" means acting with integrity, the truest test of integration comes not in times of calm but when something or someone "other" threatens our sense of self. For the women in this study, that "other" was the computer, which entered their lives via the technological imperative.

Techné and praxis are related to how we treat others (including machines). For example, if your goal is to gain a favor from someone, then having a fine conversation with that person might be a means to that goal (which is separate from the conversation); this is an example of techné. If your goal is to have a good relationship with someone, then the conversation and the relationship are not separate things; this is praxis. To exercise the virtue of integration is to engage in praxis with computers and people. To integrate is to recognize computing as communication, communication as relationship, and, therefore, computing as relationship with ourselves, other humans, and the machine. Relationships with (feelings and actions toward) both machines and people disclose something about character. Stress is inevitable when encountering something new, particularly when that "something" is externally imposed. Questioning change that seems to contradict personal values shows strength of character. The stages of the cyborg feedback model (stages that emerged from the moments of stress recounted during the interviews) were catalysts

to another way of thinking for the women in this study—steps toward the

transformation of computing from *techné* to *praxis*—via *arête*.

The accounts of the five women in this study reveal tensions within their learning, machining (computing), and communicating moments. Elena, Dale, Cynthia, Bonnie, and Amy each transcended the model of computer education as a road from anxiety to skills acquisition (*techné*) to meet an external goal (mastery). All five women acquired skills necessary to do their jobs as teachers and graduate students, but each woman eventually came to love the intimate machine for the way her relationship with the computer "reconfigured" the other relationships in her life By integrating the computer into her everyday life, each woman upheld her own values in a new way. Computing became more than a means to an end. The means and ends of computing united for the women in this study, transforming computing from *techné* to *praxis*.

# Chapter 5: Discussion

*It is our choices. . .that show what we truly are,*
*far more than our abilities.*

*Albus Dumbledore*
*Harry Potter and the Chamber of Secrets*

There are positive and negative aspects to our electronically permeated world and the other aspects of science and technology that increasingly dominate our society and culture. The point is to be aware of how we are affected—materially, spiritually, and psychologically. Throughout human history, first technology, then science, and now technoscience have intimately shaped our family relationships, living conditions, work, and understanding of our individual selves. Technoscience is a human creation, but it is not one over which individual humans exercise much control. Computers, for example, are part of our everyday lives whether we will or no. Humans engage with computers (become cyborgs) when accessing information, earning a living, purchasing food and clothing, and communicating with one another through e-mail. The question is certainly not if but how the computer will continue to inhabit everyday human life. Cybernetics, "the science of systems of control and communication in living organisms and machines" comes from *kubernetes*, the steersman, after all. How, then, to steer?

To steer the technological imperative in a good direction, humans must be "at home" with technology. To make good choices about which technologies are available and appropriate in any given case, people must be willing to engage technology

critically rather than embracing it without question or avoiding it without understanding what it can and cannot do. For the women in this study, curiosity and fear of being left behind educationally, economically, and socially started them on the road to "mastery" of the "intimate machine," but what keeps them coming back to the machine is seeing how the computer is integral to their everyday lives and values. Integration, not mastery, is work for cyborgs.

Standard accounts of women's relationship with technology stress the need for women to overcome anxiety to achieve computer literacy. Recent studies such as the AAUW report suggest that woman-anxiety-technology connection oversimplifies the actual relationship girls and women have with machines. Girls are said to have a "We can, but I don't want to" attitude toward computing, rather than a fear of or inherent lack of ability to understand the technology (7). This finding suggests a need to examine the reasons for girls' reticence, for their choice to avoid computing. Thus, while cause of women and girls' technological deficiency has been problematized, they are still viewed as technologically deficient compared to men and boys. The issue has taken on a tone of moral outrage as media responses to the AAUW's findings escalate. The problem appears to be that computing is not appealing enough to girls the way it has been presented in the past, and the solution is to find ways to make the technology more appealing. The means suggested for getting females to be as technologically proficient as males are beginning to change, but the end remains the same: Girls and women must "master" this technology so they can compete in the classroom and workplace.

While the AAUW critiques the stereotype of females being computer-phobic and recognizes that they have "good reasons" for avoiding computing, the report raises the bar for mastery higher. Not mere literacy but "fluency" is to be the new benchmark for computer competence. ("Fluency" is a term borrowed from the 1999 National Research Council, Computer Science and Telecommunications Board report, *Being Fluent with Information Technology*.) My own interviews with five women who grew up without computers suggest that, as these five women made sense of the computer in their everyday lives (at work and at home), mastery was not an appropriate metaphor to describe their experiences. While driving toward "mastery" of the tool may have been their initial response to the technological imperative, these women's lived experiences with computers extended beyond competence and mastery.

For their stories of integration, the cyborg is a more potent metaphor. The cyborg is more than a metaphor for their experiences; it is the embodiment of human-machine integration. When a meaningful context for computing emerged through a positive learning situation, each woman I interviewed found the catalyst she needed to view the computer as an integral part of herself and her connection to others. When women befriended the computer, the ends and means of computing became one.

## Additional Research

Based on the findings of this study, I recommend the following areas for further research. The field is broad, and the conversation must continue.

## Gender and CMC

When questioned directly (see Appendix F for interview questions and Appendices A- E for transcripts), the five women in this study downplayed gender differences in computing—despite experiencing the male-dominated pedagogical approaches that frustrated their early learning experiences. They supported the usual stereotypes of men and women doing different kinds of work and having different interests they pursue with computers. Of gender issues in computer-mediated communication, the women had little to say because most of them do not interact with men via computer networks nearly as often as they do with women. Altogether, the women I interviewed seemed much less interested in that subject of gender differences in computing than in the journeys they had undertaken.

## Risk Taking as a Learning Strategy

In "Computational Reticence," Sherry Turkle points out that the women she interviewed who want to be good students and not make mistakes are not using risk taking as a learning strategy. She cites hackers as risk takers, contrasting women with computational reticence (CR) as wanting a recipe to follow and living in fear of error messages. Risk takers enjoy the thrill of the quest and are willing to spend untold hours to succeed. This seems to fit with the reactions of women I interviewed as well. Questions arise: How much do these women fear looking stupid and making mistakes in-and-of-itself and how much to they fear that the only way to learn to use the machine is to devote your whole life to it? Non-Geeks fear intimacy with the machine not only because they are crossing some machine-human boundary in relating to a

thing without emotion but because they also fear that they will have to devote more time than they want to learning about it. People want to be productive, and especially at work, they need to produce not play. Most people are not programmers, and most computer users are not programmers.

The deficiency for hackers appears in the world of human-human interaction and the deficiency for non-hackers is in the world of human-computer interaction. So the extremes could be mirror images of each other. I believe we are situating courage on a couple of scales: interaction with humans and interaction with machines. Either way, the mean is appropriate ability to communicate with machines and with humans as needed—whether via e-mail, programming, phone, face-to-face communication. We want to be able to talk to the machine and to humans through various and appropriate means. We want to make more choices available to ourselves for whatever kind of communication is needed.

## Technology and Pedagogy

While George W. Bush is correct that simply throwing funding and internet access at schools cannot guarantee that education will occur, his concern about the "risk of allowing teachers to use cyberspace as an educational substitute" (A8) is based on shaky assumptions. If the experiences of teachers I interviewed, those I read about in various studies, and those quoted in the AAUW report are taken seriously, the problem is not that teachers are trying to substitute technology for teaching. It is that they have not been given sufficient opportunity (time, training, and guidance) to integrate technology and pedagogy effectively. The two extremes of reducing

technology to "learning tool" (Bush's recommendation) or elevating it to a "substitute for real teaching" (Bush's fear) are a misleading binary opposition that conceals two dangerous assumptions:

1) Computer technology must be kept in its place—mastered—by being reduced to a tool, thereby reifying an artificial machine-organism dichotomy.

2) Teachers are inherently lazy and expect the computer to do their job for them.

Assumption 1 is dangerous because by merely seeing the computer as a tool, teachers will fail to integrate technology with pedagogy. Keeping technology separate from pedagogy, encourages "othering" (separation from) rather than integration of computers in the classroom. As discussed in "The Search for a Valence" in Chapter 1 and in Stage 2 of the cyborg feedback model, "Learning Hurts: Pedagogy as Pain," when technology and pedagogy are not integrated, learning becomes difficult at best.

Assumption 2 hardly merits discussion, but it seems clear from the interviews with the women in my study (four of whom were teachers) as well as the teachers interviewed for the AAUW report (13-25) that teachers are already motivated to use technology in the classroom. What some educators may lack is not motivation but the practical experience necessary to help them integrate technology with pedagogy. If their early experiences learning to use the computer were similar to those of the women I interviewed, they may not have experienced the kind of learning that integrates technology into pedagogy for themselves. Until they experience it, they may have trouble incorporating it into their own classrooms.

## Redefining Literacy

The words "computer fluency" instead of "computer literacy" (as suggested in the latest AAUW study) may not serve educators well because there is a danger of just having "fluency" be a metaphor for everything else. Maybe a better approach would be to redefine consciously what literacy is since it is such a powerful metaphor in our society. Is it knowing how to use the master's tools the way the master says (old definition of literacy), or is it by integrating them into our own value system? Whether we call it fluency or literacy with computers, the emphasis needs to be on something other than control and mastery if we are to appeal to girls and women. Evidence from the AAUW report and the interviews for this study suggests that "integration" is part of the key to getting women involved with computers. It seems the AAUW suggestion of computing across the curriculum could help provide the context for integrating with the machine. Those responsible for leading efforts at computing across the curriculum would do well to investigate lessons learned by leaders of writing across the curriculum.

## Conclusion

Together with our machines we are part of a larger system that includes our environment. Machines do change us and we do change them through interaction, and together we affect and are affected by our environment through interaction. Getting the inscription to go both ways is the key to power politics—not reinscribing "the master's tools" in our own image, whatever that may be, but mutual inscription.

Coding us, coding the machine, coding the environment. We constitute and are

constituted by environment. We are our own environment.

The report focuses on computers and education, bringing educators up to date on

the state of the cyborg classroom, with the statement, "The question is no longer

whether computers will be in the classroom, but how computers can be used to

enhance teaching and learning" (ix). The problem posed is girls' continued lag behind

boys in computing, and the solutions proposed are meant to "improve the quality of

the computer culture for all students" (ix).

The new standard of "fluency" assumes an ability to use abstract reasoning; to

apply information technology in sophisticated, innovative ways to solve problems

across disciplines and subject areas; to interpret vast amounts of information with

analytic skill; to understand basic principles of programming and other computer

science fundamentals; and to continually adapt and learn new technologies as they

emerge in the future. It is our job as a society to ensure that girls are just as competent

as their male peers in meeting these standards.

The situation does seem dire, but emphasizing skills acquisition (of which

computer fluency/mastery is just a higher bar that literacy) and girls catching up with

boys neglects another possible motivation for connecting with the intimate machine.

Befriending, rather than "mastering" the machine may be a more appropriate

metaphor. Instead of "tricking" students into liking computers, teachers can help them

discover how computers are integral to human activities and relationships. Providing

one-on-one guidance and encouraging students to be one another's mentors may be

another positive approach. Women, the purported relationship managers of the world,

do have something to say about computers once they see it computers are not antithetical to human relationships but can enhance them—once a good relationship with the machine is established.

The research and recommendations of the *AAUW Tech Savvy Report* are important and certainly can provide impetus for substantive and positive changes in both course content and pedagogical strategies in American classrooms. The idea of computing across the curriculum, for example, is a solid one. While the AAUW report provides an important glimpse at the state of the cyborg network (students, machines, teachers, and pedagogy within the larger system) in American classrooms, a disturbing pattern appears in the concept of "fluency" versus "literacy" that is the report's centerpiece. The language of the report emphasizes the mastery trope in alarming ways that are of questionable appeal, particularly in light of a virtue-ethics approach to computing. To say students "must be educated to move beyond word processing and presentation software to solve real-life problems with technology" raises the bar for mastery, thereby reducing computing to *techné*, albeit a high level of *techné*.

Movement from *techné* into *praxis* by means of *arête* was necessary for the women I interviewed to develop a true enthusiasm for their relationship with the intimate machine. I believe the recommendations of the AAUW report will help that process to happen, but if so it will be despite, rather than because of, the enhanced version of mastery proposed. My caution is about continuing to use the metaphor of "mastery" to make fluency (souped-up literacy) an external end of computing in the classroom will keep students imprisoned in the same black box the AAUW report wants to help free them from. Perhaps the best approach is to cease "othering" and "mastering"

altogether and find a way to embrace the machine that has become a part of us. Integration is not about mastery or perfection but about integrity and connection.

Postmodernity is a cyborgian state. But human actions, feelings, and motivations always have been partial, multiple, and burgeoning with irony, so what really is new? Perhaps what separates humans from other forms of life is a need to feel we are separate—first as humans, and then as individuals. Cyborgs are not merely individuals but networks of mutually constitutive relationships among various machines and organisms. Such relationships flourish not through fear, blind faith, nor absolute mastery but through integration—a mean approachable from any extreme if we have but courage to do so.

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# APPENDICES

# Appendix A: Amy

1     Q1.About yourself and your relationship to technology. So what images
2   does the term "technology" bring to mind?
3     A. To me, the word "technology" used to be a word that used to bring
4   dread and fear. Now, I -- technology -- I'm appreciating the word more
5   because there's so many more positives. I'm discovering more positives about
6   technology. I just used to think it was just a bunch of machines and wires here
7   and there all over the place. And just confusion. That's what it had meant to
8   me then. Now, it's not so bad. It still overwhelms me a bit, because I don't
9   know what's out there or how much I could control it or how much will it -- I
10  haven't discovered the full benefits of it yet. I'm start -- it's more fear getting
11  in the way than, you know, discovering the benefits of technology.
12     Q2.Do you consider yourself mechanically or technologically inclined?
13  And why or why not?
14     A. Probably mechanically, because I feel I'm in control of something in
15  front of me. Like, for example, a good one is a can opener. I like to use a
16  mechanical one because I can control it. I don't have to worry about it raring
17  up and cutting me, or -- depend on electricity.
18     Q. I can relate to that.
19     A. Oh, yeah. I'm more -- way much more mechanically inclined, because
20  I -- it's faster, and I don't have to wait for it to get ready. I don't have to plug
21  it in. I don't have to -- you know, it's right there. Why it go -- I mean it's just
22  right there. That's the way I've always been, you know.
23     Q. And so you consider yourself mechanically inclined?
24     A. Um-hum.
25     Q. What about technologically?
26     A. Even though I'm getting more comfortable with technology, I tend to
27  be -- to do things by hand, because I use my hands a lot. And it's basically
28  because I don't know what technology can do for me. I don't know how to
29  control it. I don't know how to use it. That's probably why.
30     Q. It might be important. I'll let you decide. But why do you use your
31  hands so much? You said you use your hands a lot.
32     A. Well, it's part of my communication because I'm hearing impaired
33  myself. And my hands are so important to me. I can't imagine what would
34  happen if my hands were cut, you know. I probably would panic for a while.
35  But then, you know, maybe technology would come in and help me. I don't
36  know. But I -- I depend on my hands so much that it's just, you know, a more
37  important part of me than anything else. Of course, I have some technology
38  that I use for my hearing -- you know, my hearing impairment -- my hearing
39  aids. And then there's closed caption, and that's part of technology I enjoy
40  thoroughly. That's something that -- I'm appreciating that part of technology
41  because I don't have to worry about running it or setting it up and all that. It's
42  there for me.

43      Q. Just kind of invisible.

44      A. Communication-wise, technology -- that part I appreciate when it does

45  jobs for me because that's (unintelligible).

46      Q3. And then who -- you've answered this a little bit. But who and what

47  has influenced your belief about being technologically and mechanically--

48      A. My family. My parents and my grandparents used the computer. My

49  grandparents never have used it. My mother hadn't used it until she was in her

50  40's. And so I wasn't really pushed to take it because we both didn't feel -- I

51  guess a need for it. Or we just felt that it was too much to worry about. So it

52  never was really, you know, brought to me. Part of it is finance, too. You

53  know, it -- things get more technological, I think it's more expensive. So you

54  feel like we have to wait a little while until we get our, you know, things that

55  technology -- like, for example, I couldn't get a closed caption decoder till I

56  was in my 20's, because it was cheaper by then than it was when it first came

57  out. And they were more readily available in stores. Same thing with

58  microwaves. I mean a whole bunch of people had microwaves before we did.

59  We just thought, you know, let's get a microwave when we felt that we could

60  afford one. So I think money had to be a big part of it.

61      Q4. Okay. And just kind of using your imagination and memory and

62  things that it means to you now, what does the term "computer" mean to you?

63      A. Computer now is -- to me, it's becoming a critical piece of

64  communication. Before, it was just a piece of -- a machine that would do my

65  papers. Now at the library it's my (unintelligible). It's my mailbox.

66  It -- hopefully, it -- it's my resource. It's -- hopefully, it will help me with my

67  daily life like my budgeting, my -- you know, our money, and as well as

68  planning things. I want to use it more for everyday use, rather than just my

69  job, and then to communicate with friends. And I hope that it would help

70  with other things, as well. To me, when I was growing up it was just a piece of

71  machinery that knew a lot about information. It was just -- didn't belong in

72  the house anywhere -- just was in the science department of a university or

73  some research place. And now it's in the home, and it's where you have games

74  on there. It's your entertainment. It's just incredible that that one piece of

75  equipment can be so many different things. And I feel like it's going to be

76  the -- (unintelligible), as many other people feel. It's going to be probably the

77  only appliance in your house, you know.

78      Q5. Yeah, I suppose. It's definitely got many uses. So moving on to the

79  next set of questions, early use. Memory lane. What was your first experience

80  with a computer like?

81      A. My first experience was science. I grew up loving science, and

82  science -- it had computers. I think I was in high school -- freshman year in

83  high school -- when I was first introduced. At first I was excited. I was

84  excited because I got to do something different than books, the standard

85  books and paper. We did test questions on there. We read our unit material

86  on that. I didn't answer questions. It made it a lot more fun and quicker.

87  Saved a lot of money on paper, too. It was using -- we were using

88    Commodores, those old dinosaurs that we call them now. But, to me, it was
89    just, wow, you know. It was like -- it was much better than a typewriter, or it
90    was much better than a book. It's all right there. And I started hating it when
91    I was forced to take a computer class in high school. And learning what it
92    takes to create a program just turned me off. And I thought that's what I
93    would have to do more to get the access to the computer that I, you know,
94    was hoping for. And it just turned me off. It was too scien -- it was too
95    mathematics -- too much math. And I'm not very strong on math. And it
96    turned me off. And, also, I remember when the guys were using the -- when
97    we, the class, were using the computer labs, one thing that made me mad was
98    all the guys would take over and not let the girls take -- and the science teacher
99    didn't work with the girls as much, because I felt that we were second class by
100   this one teacher, and that turned me off. I thought, oh, this is just a bunch
101   of -- it was something for guys to do because they knew -- you know, a guy
102   can build cars. They can put car parts together. I thought, well, computer
103   programming -- well, big deal. I'm not interested in putting programs together
104   like guys would be. You know, I just -- I wasn't interested in it. I just lost
105   interest right there because nobody would help me. So -- and I said, well, if
106   that's the way it's gonna be, then forget it.
107        Q. So it sounds like it was almost a combination of the teacher and the
108   guys' perception that this was a guy thing, and you kind of felt that way, too.
109   And then any time you thought, well, maybe I'll try to do this, you -- the help
110   you needed wasn't available?
111        A. Um-hum. It wasn't available.
112        Q6.Okay. So that kind of ties into some of the next questions. First,
113   before we go into what help you did or didn't get, I'll ask when and how did
114   you first really learn to use a computer? And then what questions or concerns
115   did you have?
116        A. After high school I went into college. Computers wasn't really a big
117   huge part as it is now. It was starting to. I was amazed at what the girls that
118   lived on the same dorm floor as I did had a computer in their room. I
119   thought, my gosh. Now, in a way I felt like she was lucky, and in a way it was,
120   like, how could she afford that? It was -- you know, it was a combination of
121   feelings. They did have a computer lab, and I took -- tried taking a few classes,
122   and it was confusing because, again, the guys would get in the way. And to
123   teach computers you have to teach in front of the whole class, and there's a
124   monitor in front of everybody. And I felt like the pace was too fast for me. I
125   wanted somebody to sit right next to me and show to me how to use it,
126   instead of just trying to listen to what the teacher was saying. Even though he
127   had -- it's funny. One class I had, he would verbally say what to do, the steps,
128   would explain the steps. That didn't help me at all. Then another class he had
129   on a screen, but he went too fast, and I still wanted somebody right next to me
130   to show me. And there were too many people in the class, and there wasn't
131   enough time for the teacher to come around and help everybody. Again, the

132    guys had all the attention, because they -- I don't know what it is about it, but I
133    thought it was a little unfair.
134        Q. So how did the guys getting the attention work? Did they just -- they
135    would ask a lot of questions?
136        A. Ask a lot of questions. And every time hands were raised up, you
137    know, the teacher would go -- and, again, it was a male teacher. They were
138    all -- all the teachers I had were male. There weren't -- I don't think I had a
139    female computer teacher/instructor at all. And I felt kind of intimidated by
140    that. So I think it was a mixture of my hearing impairment, couldn't follow
141    what was going on, and my need for somebody to demonstrate with me.
142    There was too many people in the class, and I think it was the male teacher.
143    I'm not trying to backstab a guy, but it seems like there was more bonding
144    between the male teacher and the male students. You know, and I
145    experienced that in science class, and I even had one biology teacher. I was in
146    advanced biology. He said, "You're doing great for a girl." I was like, huh?
147    What does that mean?
148        Q. This was in college?
149        A. This was in high school.
150        Q. High school -- somebody actually said that?
151        A. Uh-huh. Oh, yeah.
152        Q. Oh my.
153        A. I was like, okay, buddy. I'll show you a thing or two. He made me
154    mad. And I -- all of my science teachers were men. And if it hadn't been for
155    me saying, look, I have a hearing loss. I need your help. I actually wrote
156    letters to each of my science teachers. I said I'm going to need your help. You
157    know, I'm going to be asking a lot of questions. I'm going to be bugging you,
158    and I'm going to need you right there, because I want to know what's going
159    on.
160        Q. Yeah. And a lot of women who aren't hearing impaired felt the same
161    way--
162        A. Um-hum.
163        Q. You know, when it comes to computers.
164        A. I thought the girls were trying very, very hard to get the attention of
165    these teachers. And -- you know, and I felt like they -- they wanted to know,
166    too. I felt like the guys were taking over, and I just -- and just sad to see that,
167    you know.
168        Q7.So when it came to learning about computers, who or what helped you
169    find out what you needed to know?
170        A. Actually, nobody helped me, because I got fed up with teachers.
171    I tried -- okay. After college I avoided it. A friend of mine during college said,
172    "You can have the use of my dad's computer. I'll show you a few things, too."
173    But she wasn't an instructor. But still it was enough for me to type a paper. I
174    still couldn't get into a computer. I still couldn't get out. I still couldn't print.
175    She did that for me. And then by the time I got to my first job in
176    college -- not college -- in Tacoma, Washington, I said, "To heck with it.

177    Nobody's helping me. I'm going to just turn the thing on and see what I can
178    do. And that's how I learned how to get into the program. Macintosh
179    was -- was, to me, and still is, the best program for me, because they would
180    have windows for me to go into and explain to you how to do, you know,
181    different things with the program. It would have windows. I would
182    remember, oh, how to do -- I'm still not wholly an expert. But I feel more
183    comfortable with the Macintosh. To me, it was more user friendly than any
184    other form, even more than IBM. IBM -- I still have a hard time with it. But
185    with Macintosh, it seemed to fit my needs more than anything else. So I
186    basically taught myself by exploring and playing around with it -- with the
187    Macintosh system. And I -- again, I tried taking a class with Macintosh.
188    Again, the teacher was male. Again, I couldn't get him to help me, and I
189    learned nothing from it. And I -- to this day, I won't take another class.
190        Q. Too much frustration?
191        A. Too much frustration and too -- a waste of time and money.
192    And -- but somehow I was able to find help how to do certain things through
193    certain people. I--
194        Q. Colleagues, co-workers, or--
195        A. Co-workers would help me. Some people from the computer
196    department would come in and help me fix the problem. Certain relatives of
197    mine have helped me. And -- and I -- I somehow managed to be able to
198    write -- type papers. There's still a bunch of things I'd like to know.
199    Why -- how to set up a data base. How to set up a spreadsheet. I know how
200    to do charts. I know that's a spreadsheet. See, I'm not -- I'm still not literate.
201    I can't explain what I'm doing. But I can get in and make a graph, like a list of
202    names and a list of -- up above on the horizontal line, you know -- make a
203    chart that way. But still you can learn a whole lot more. How to make them
204    bigger -- make big graphs -- and how to make them smaller. And I'm almost
205    afraid to ask other people, because I feel like I should have known -- learned
206    by now.
207        Q8.That's what stands in a lot of our ways. But -- yeah. So you've talked
208    a bit about this, but if you want to add anything, I have a question. Who or
209    what hurt your ability to find out what you needed to know?
210        A. The teachers.
211        Q. Yeah.
212        A. The size -- class size. It should've been smaller. And the lack of
213    access to information. See, at college -- my college hurt me there, too, because
214    I had a choice between note takers and interpreters. I wasn't -- I was
215    (unintelligible) -- I learned sign language when I was a freshman in college, and
216    I wasn't fluent enough. I mean I could use it for basic communication, and
217    my sign language skills were developing. And I wasn't fluent enough to be
218    able to read it from an interpreter. I am now. I mean after ten years, you
219    know. But this is only two or three years after I started, and it still wasn't
220    there. And in college they made this stupid rule, which was, again, the federal
221    law of access, that you can only choose a note taker or an interpreter. They

222    couldn't afford to pay for both, which was totally against the law. And a
223    bunch of deaf people were trying to overturn that. They finally now have two
224    people. So because I wasn't fluent in sign language, I chose the note taker.
225    The note taker couldn't help me with that. I just needed to be able to have
226    that link with the instructor, and I was just falling, falling far behind. So I
227    think that's what hurt me, is the teachers treated people in the class, and I
228    think that's clearly the thing that hurt me the most.
229        Q. What else would it help you find out what you needed to know? It
230    sounds like you sort of -- you implied it. Well, if you'd had an interpreter, that
231    would have been nice.
232        A. I mean at that time -- this is funny, because at that time in college I
233    think it would've helped if someone -- if some instructors would have had
234    several aides in their class to sit next to some teachers. I mean how can one
235    teacher reach 40 people in one hour? That's impossible. I think they should
236    have had several people there to, you know, work with the teacher and help
237    them with that. I think that would've been very good. I think there should be,
238    like, one aide for four people. I think for computer-related classes -- that
239    would be good for my deaf needs. In college it wasn't there. At the time I
240    didn't know sign. But at the workplace they still were struggling how to
241    provide interpreters for me, and I think that's another thing. They should've
242    had interpreters for me at both places. I always wanted it there. But I think
243    the number one would've been having more classroom aides in that class.
244        Q. Well, that would have helped everybody.
245        A. Um-hum. Not everybody could keep up at the same pace, and I think
246    they didn't realize that. So--
247        Q10.      What has been your best or your worst experience with the
248    computer, or if you have one of each that you want to share--
249        A. Okay.
250        Q. It's up to you.
251        A. I think the worst experience with a computer was -- I'll have to think
252    about that one. I have a couple. The worst experience was when I first started
253    working. I thought there was nobody there to help, and I couldn't -- I felt like
254    I couldn't talk about that I needed help with computers. And the school
255    district offered classes, and I felt like it wasn't enough, that I didn't know how
256    to ask for more. Then we'd have talk to them and talk with me in helping with
257    it, and I came to the point of just -- I was just playing with the computer
258    myself. And I felt so behind. And I had this huge need -- I wanted to get
259    onto that computer bandwagon to help me do my job, because I have to do all
260    these reports. And not have to start a new paper every time. I wanted to be
261    able to create a template so that I could pull that out and put students' reports
262    in, because I had a caseload of 58 students. And I thought I have a lot of
263    work to do, and I wanted to get with it. I realized, you know, at that time for
264    the first time, I better learn this time. And so -- and I thought there's only just
265    one person. There's me. And I -- I want some -- I want something done
266    easier for me, too. And I think that finally pushed me. The best experience is

267    when I first got onto e-mail two years ago with all of my best friends.  About a
268    week before I had met with one of my friends, and then, you know, I
269    happened to be in town.  And I ran into her, and I said, "I'm so jealous that I
270    feel left out.  I don't have a computer."  And she laughed at me and says, "You
271    are left out."  And I thought what a not a nice thing to say.  And I think she
272    was frustrated, too, and she was angry with me a little bit because I
273    hadn't -- she didn't understand why I couldn't -- wasn't e-mailing like everyone
274    else.  And it was, like, it was more finances.  And, plus, my mistrust of the
275    computer itself.  And I -- after she left and I went to a friend who I was in
276    town with, and I started crying.  I said, "I feel so lost without them.  I want to
277    be back in the circle."  And then she said, "You know what?  When we get
278    back to work tomorrow, I'll set you up on the e-mail."  And she called the
279    district for me.  She said, "You know, let's get this -- get her set up."  And she
280    taught me how to get into the program.
281        Q.  So this was--
282        A.  You know, and it was exciting.  It was -- oh, I got to e-mail my Mom.
283    I didn't feel like I was alone anymore.  And actually, it probably -- it got me
284    more homesick, because I wanted to be with my -- you know, my family.  And
285    it was wonderful, because going through TTY on the phone it's so expensive,
286    especially with long distance phone calls.  At that time nobody wanted to use
287    this TTY anymore because there was e-mail.  Nobody called me anymore.
288    And, you know, the phone never did ring much at my apartment up in Gig
289    Harbor where I was so far away from everybody else.  And it was
290    lonely -- very lonely.  And then when I got to use e-mail for the first time it
291    was just -- you know, it was just like they were right next door to me.  It was
292    just wonderful.
293        Q.  Back in the fold, huh?
294        A.  I mean it was faster.  It was easier, and I felt I was in control.  And that
295    was when things started turning around for computers, providing me
296    something that I needed so much in a fast, quick, efficient way.  And I started
297    to look at it.  Hmm.  And I loved e-mail right away, but still wasn't sure about
298    the Internet.  I still had a huge mistrust of it because I felt like it was too
299    confusing to get into.  And I was jealous of younger kids being able to use it.
300    So I think that was the best experience like that.
301        Q11.        Well, that's a great story.  That's a good experience.  So moving
302    into the next section, current use of computers, the relationship with
303    computers now.  And some of this you may have covered.  So just feel free to
304    answer however you want to.  You can refer back or just go with the question
305    as it is.  Have your thoughts and feelings about computers changed from early
306    experiences?
307        A.  Drastically.  Drastically.  Even though I have to go through it by
308    myself, I've had some people help me greatly.  When I came to the [District
309    Name] School District I missed the e-mail, and I didn't have it for a year.  And
310    it was -- you know, it was frustrating.  And then I got back onto it this year.
311    But last year I had to do all my reports, everything -- progress reports.  For the

312    first time I was required to do them on the computer.  And I thought, oh, my
313    God.  And I started panicking, and my co-worker in the resource room -- I'm
314    a speech language therapist.  Of course, we have to do our documentations on
315    the computers.  And it scared me to death -- literally scared me to death.  And
316    I thought, okay.  Do I have to take a class for it?  I don't have time.
317        Q.  And classes had been so helpful.  Right?
318        A.  And classes have been really helpful, and I did not want to take a class.
319    And it was a co-worker of mine that -- one night I had tried to use it, and it
320    totally messed up.  And I had three to do before the next day.  And I started
321    crying and yelling and cursing at the computer.  And another co-worker heard
322    me.  She said, "Uh-oh.  You need help."  So she called another co-worker, and
323    she came in.  Within, I felt like, two seconds, and she helped me from then.
324    And she was the biggest influence in the present, for the last two -- the last
325    year and a half.
326        Q.  By the way, you can use people's names, because I'll change them if
327    you feel--
328        A.  Okay.  Well--
329        Q.  If it's easier.
330        A.  I can use people's names?
331        Q.  Yeah, if you want to, because they won't--
332        A.  Future mother-in-law, bless her heart.  I mean she has the patience of a
333    dove and came in and worked with me and explained to me, and she sat there
334    and showed to me, and she looked at my face where I could see and
335    understand her.  For the first time somebody who had worked with me
336    showed me.  That's what I had needed all along.  And she was much better
337    than a class.  And I am much more confident about it.  Now that she's not
338    there because she's retired, and it was like ahhhh.  But I have discovered who
339    else is there for you, because they are the media specialists, and they are
340    supposed to be taking care of people who have computers in the room if
341    problems should arise.  Those are the people to contact.  And another lady at
342    the media department at XX School District is a big help.  I can call her.  Hey,
343    what's happening, you know.  And I discovered that she could talk to me, and
344    I said, "I don't have much computer -- I -- I have mistrust with it.  And I want
345    to know what's going on."  And she has actually sent people over, which they
346    normally don't do -- have sent people over from her department over to my
347    computer and see what was wrong with it or to set up my e-mail, because I
348    said, look, and it's the biggest piece of communication I can use that will be
349    vital for me to communicate with my co-workers because I'm hearing
350    impaired.  It will help me -- possibly later to communicate with the parents and
351    other specialists outside the school.  I must have e-mail.  And for the first time
352    somebody had listened to my needs and said, okay, and took care of it right
353    away, because here I am.  I've worked in a deaf program for eight years, and
354    now I'm in a hearing program.  And, to me, I have a lot to prove to these
355    people.  And I wanted to show them that a deaf person can make it in a
356    hearing school.

357  Q. Do you feel that you became more assertive in asking for what you
358  need--
359  A. Um-hum.
360  Q. Also?
361  A. Yes.
362  Q. So it was kind of a combination. Somebody finally listened, and
363  perhaps you were also being more assertive?
364  A. Yeah. And I think I felt frustrated to the point where I said -- when
365  you -- yeah. When you get pushed to a certain point, I was just -- finally -- it
366  isn't just -- it -- you get to the point where it's like come on, stop it. It was
367  almost desperate. And all my friends were anxious. Well, why don't you have,
368  you know, e-mail? And it's, like, be patient and patient. I'm trying. I'm trying
369  to get it set up. And now it's up, and I tell you, my whole world's opened up,
370  you know. I can't imagine my life without e-mail. I can just go on about e-
371  mail.
372  Q. The good news is we have a section on that. So you can--
373  A. Yeah.
374  Q. You can talk more about it then, too. But great. That's exciting stuff.
375  That's really cool.
376  A. Yeah. And I -- I feel much more hopeful now because there are
377  people who will help me, you know. The man I'm going to marry has the
378  same feeling of mistrust. He's more of a mechanical type of person. We both
379  feel the same way. He's starting to get more excited about computer at his
380  work. So I have a -- you know, I'm excited because I think we're going to set
381  up our own computer right -- almost pretty soon -- that we can start to use it
382  more and more. And knowing that there will be help. My step-father knows
383  how to set it up, and then my future father-in-law knows how to set it up. My
384  future mother-in-law knows how to set them up. And there's more people
385  around. I don't have that fear of who do I go for help?
386  Q. You've kind of answered this. But how and where do you use the
387  computer? What primarily do you use it for?
388  A. That's all. At work, primarily. To me, it was a safe place. If
389  something went wrong, I could just leave it at school and let them take care of
390  it. I'm getting a little bit more confident where I can set it up at home. Of
391  course, I'll have my little fear of, oh, my God, what's gonna happen if it breaks
392  down, or if something went wrong with it? Privacy is another issue, too.
393  Putting it in my home, will I have my privacy? And because that -- the access
394  to have somebody fix it for you isn't as much as the school district. I mean
395  there's somebody there. There's somebody in the library. But now at home
396  you're kind of pretty much on your own. And so I'm getting more confident.
397  And I would like to try it at home.
398  Q. Does your computer have a name?
399  A. Oh, my computer? Does it have a name?
400  Q. Do you have one you--
401  A. Sometimes I call it the damned thing. "You damned thing."

402       Q. But other than that--
403       A. I think -- I don't have a name for it. I might come up with something
404 at home. But I just call it the computer. I'm not that -- where I name
405 something like that. Yeah.
406       Q. Well, I'll just go ahead and ask. Why is that? Why would you not
407 name it? Just why would you not name it? Just doesn't--
408       A. Well, I haven't even thought about it.
409       Q. There is really no reason to have to justify not naming it.
410       A. Right. Yeah.
411       Q. I just wondered if you had.
412       A. I -- I hadn't even thought about naming it.
413       Q. So along those lines, do you talk to the computer?
414       A. When I'm mad. "Why are you doing that to me?" Sometimes when
415 something good comes out of it, I pet it. I just go, "Thank you, thank you,
416 thank you." I don't know. I -- when I'm mad I talk to it more.
417       Q. So what -- how do you talk to it?
418       A. Oh, (unintelligible). But I know it doesn't talk back at me. I have
419 sometimes got frustrated where I actually banged the top of it and yelled at it,
420 you know.
421       Q. You're not alone in this.
422       A. Yeah. I -- yeah. It's my outlet when nobody else is in the room.
423       Q. And do you have a favorite joke about computers?
424       A. No. I haven't -- I haven't -- I don't know any good computer jokes.
425       Q. So you had something else you wanted to add?
426       A. Oh, yeah. I was just thinking about it on my little break. Yeah.
427 Taking computer classes in the past was just like taking an auto mechanic class.
428 And women -- I felt like women weren't expected to know this stuff. And all
429 the guys had all the time for the questions and the -- and the help. That's
430 exactly how I felt.
431       Q. And do you--
432       A. It was a male-oriented type of class, and you felt like you had to push
433 and shove and maybe still wouldn't get anywhere.
434       Q. So had you taken an auto class before?
435       A. No. But I would imagine.
436       Q. From what you've heard?
437       A. Yeah. What I would imagine it would be. I've never taken it, but
438 maybe it'd feel like I was taking an auto mechanics class.
439       Q. Good comparison there. Thanks. I think -- let's see. We'll skip 16
440 because you don't have a home computer yet. But I bet you will soon. Okay.
441 17 -- how would you feel if you no longer had access to a computer?
442       A. I would miss my connection with the world, especially my friends and
443 my family. I would miss the communication aspect of it. I would miss the
444 ease of writing a paper. I would miss the ease of finding out information. It's
445 funny. I'm 33 years old, and I'm finally appreciating it and discovering -- you

446    know, it's taken me 12 -- 13 -- 14 -- 15 years since the time I was introduced to
447    computers.
448        Q. And you're finally starting to feel like they're your friend a little bit?
449        A. Yeah. Yeah.
450        Q. Is there anything you -- well, what would you miss the most? Would it
451    be the communication?
452        A. Communication.
453        Q. And then--
454        A. Communicating with my friends from faraway places. I would miss
455    that, you know, horribly.
456        Q. And is there anything you wouldn't miss at all?
457        A. That I wouldn't miss?
458        Q. Yeah.
459        A. I -- I -- you know, my thoughts on the computer has -- has been a lot
460    more positive in the last year, and I haven't even thought about it. What
461    would I not miss? Hmm. I don't -- I can't think of anything on that one.
462    What would I not miss? That's interesting.
463        Q. Yeah. That is kind of interesting. Maybe it's sort of surprising for
464    you?
465        A. Yeah. Yeah.
466        Q. Now we're switching gears to a whole other realm. Computers and
467    gender, or maybe even more personality-type, depending on how you decide
468    to view these questions. So let's see. Do you think men and women use
469    computers differently? If so, how so? And if not, why not?
470        A. I don't think women and men think any differently. I think it's still a
471    male-oriented thing, because it's the men that are building the programs
472    because they have that -- the logical mind to put things together, like they were
473    putting (unintelligible). That's what I think. But I think there's been a huge
474    increase in women using it. More usage of women that I've seen in the last
475    few years that I've seen before when I first started. And I think women are
476    just quite intelligent and much -- and are much -- as just as capable as men
477    about developing these programs. They may even do better kinds of
478    programs, because I think women can think of something to add to computers
479    that men wouldn't think of, because we're so domestic and more organized.
480    We tend to be organizers -- more organizers than men, I think. And
481    generally -- and I think they have a lot more to add if -- you know, if men
482    could just, you know, let them come in. I hear about Bill Gates. I hear about
483    all the CEO's, and all -- most of them are men. And I'm thinking where are
484    the women in this? And I think there will be a time there will be a woman Bill
485    Gates. I think there will.
486        Q. Does one sex or gender enjoy computers more than the other?
487        A. Oh. Does one gender -- yeah. I used to say that men enjoyed
488    computers more than women. But now I think both genders enjoy them
489    immensely. Now they've come up with websites for cooking recipes and class

490   and shopping and -- and medical resources that you would use at home to find
491   out wrong with your kids at home. I think both genders enjoy the--
492        Q. Do you think they each enjoy them, but they maybe have different
493   uses for them?
494        A. I think they have different uses for them. Absolutely.
495        Q. And do you think of computers as he, she, or it, and why?
496        A. I think they are becoming more user friendly, but as it gets more
497   advanced it gets more confusing.
498        Q. Oh, I was--
499        A. Oh, I'm sorry.
500        Q. I was on question 20--
501        A. Oh, 20.
502        Q. On the--
503        A. Okay. It.
504        Q. It -- okay. That's an easy one. So about the computer programs that
505   would be more user friendly for people in a certain way, or what do you--
506        A. I think it's more user friendly. One kind of program I've found was
507   totally user friendly was the (unintelligible) because they had questions. They
508   had questions for you, and if you answer one of them you were to go to a
509   certain step. I like the step-by-step question -- questioning the person who's
510   using it. But I feel like there needs to be more of that because there's still a lot
511   of people out there that don't have computers at home or people who are on
512   welfare that can't afford to buy a computer and won't have much access to a
513   computer. That's my concern. But for me I think it is somewhat more user
514   friendly, but it needs to be more -- more so. Because our kids are getting the
515   education from their school, and there's those classes again. I don't know if
516   they're still around, you know, and it still feels like an auto mechanic class.
517   But, again, it took me -- because of my limits of knowledge on computers, I
518   might not be aware of such programs out there. But I know there is one that
519   is more user friendly.
520        Q. And when you say "more user friendly," are you thinking--
521        A. (no audible response) for my--
522        Q. For your way of--
523        A. For my way of -- yeah.
524        Q. And do you have a way of describing your way of approaching the
525   computer? You know, some people think liner or non-linear. Do you have a
526   name for--
527        A. I'm not sure what my way of thinking -- linear -- non-linear.
528        Q. There might be other ways of describing it, too.
529        A. Mine is more like step by step, how to. That's what I look for. So
530   when I get onto a program, I want to know what I need to do first, then what
531   I need to do if I wanted to look -- if I want to do something. If I want to do
532   something different, how do I do -- how do I get into that? I want directions.
533   I mean rules are nice to have, and to go into a window that says help, I don't

534    have time to read all that. The (unintelligible) have questions for me as I went
535    along. It was like a flow chart type of thing for me as we went along. So--
536        Q. And so it gave you options, but--
537        A. It gave you options, yeah.
538        Q. But it wasn't all confusing. So--
539        A. Right. I didn't have to read like -- you know--
540        Q. Twelve pages?
541        A. I don't have time for that.
542        Q. Right. Okay. So I think you kind of answered 22. But talking about
543    how most computers and software programs are designed, are most of them
544    designed to make it easier or harder for someone like you to use the
545    computer? It sounds like you like Turbo Tax (phonetic), but maybe there
546    aren't a lot that aren't so great.
547        A. Right. Right.
548        Q. Specific tools and uses -- actually, I think I need to flip the tape over.
549    Specific tools and uses -- what about writing? Do you do any kind of writing
550    on a regular basis?
551        A. (no audible response) reports, reports, reports. When I communicate
552    with my parents, when I type letters, I save it. And I print it out when I need
553    to make another copy. Oh, I do lesson plans on that. I do work sheets. I
554    create my lesson work sheets. Of course, I do letters. I do -- I'm a deacon at
555    my church. I use it for my minutes. I use it for everything relating with
556    writing, to write memos, to write goals, when I need to turn them in for -- to
557    my principal. Oh, yeah. I love it. I -- I use it all the time. I hate writing on
558    paper now. I never want to do that. If I have to do it at home, oh, well, I
559    write it on paper. But I can't wait to get to the computer so it's all right there
560    where I can move the words around, change them, save it. It'll just ignore it.
561    I'm not worried about losing it. I use it for every process of writing I
562    have -- pre-writing, first draft, and final. And I save them, you know, each
563    piece. And I -- sometime back when I was still living up in Washington, and I
564    did a diary. I went through kind of a counseling period of my life where I was
565    kind of in terms of my parents' divorce. And there were some emotional
566    healing that needed to be taking place, because I finally moved away from
567    home for the first time. And I wanted so much to have a diary. But I just
568    couldn't pick up the paper because it was just too much to write. Then I'd
569    have to erase. But on the computer I could type so much faster, get my
570    thoughts out much faster. I remember when I was going through a difficult
571    period, and the experience was more like crying jags. And I've never been able
572    to put in front of me so I could read it back and say, wow. It was just
573    different, because I never really talked about it with anybody. And one night I
574    had such one of those crying jags that lasted for several hours because I was
575    just -- you know, at that point in my life all of these emotions kept coming up
576    because I had repressed them for so long. And they would start out by just
577    feeling depressed, and then I would just start crying, you know, at the drop of
578    a hat, and I would not stop for two hours. I would get to where I'd lean

579    against the wall, (unintelligible), and then just I would never have enough
580    energy to write, because I didn't have a clear -- I couldn't put it on paper. But
581    somehow I wanted to learn just so I wanted to show it to somebody what I
582    was experiencing. And one night I finally did. I got up. Even though I was
583    deadly tired, I went to the computer, and I just poured everything out. I was
584    able to explain that type of experience. And I tell you, it was just amazing how
585    fast I could type it out and how it came so clearly on the screen. I was actually
586    able to look back and go, wow, you know, and I could take it my counsel and
587    say, "This is what I've experienced. This is how I can explain it." A lot of
588    times I have a hard time explaining (unintelligible) so -- I get so emotionally
589    choked up talking about it. And then I said, "This is what I experience during
590    the crying jags." And she was, like, whoa. So she had a clearer picture of what
591    was happening to me and, you know, she encouraged me to do more of this
592    kind of writing. And it was -- it was a time that I actually looked forward to,
593    because it was late at night. It was my -- you know, I'd write better. I'd think
594    better, more clearly, more personally maybe at night because it's more quiet.
595    And I love doing that.
596        Q. So there was something about the keyboard of--
597        A. The keyboard itself had a way of expressing. It was an outlet. It
598    wasn't -- I still have the copies which, you know, I look back, go wow, you
599    know. I'm glad I did that because I could see how much my life has changed.
600    But it was just a such a way I could express myself and was just a wonderful
601    way of doing it. Much better than paper -- paper and pencil. It was such a
602    powerful tool for me because I could get it out, and I could look and see. It
603    was like a mirror for me. And I needed to do it instantly, the minute I felt
604    something, I could type, because I am more of a mechanical person rather
605    than writing. And then I'm faster at typing and signing, but it's only two
606    fingers can move, and my thought process is more slower. And there's a
607    roadblock to get it on paper from pencil because I had to erase it, and did
608    more writing. I did -- I wrote something else. But with the computer I was
609    able to look and see the process of my feelings. And it -- and I hope to do it
610    again. I want to -- I'm -- that's (unintelligible) I want to have when I am
611    home. If I have one at home, I want to use that, because I want to look back,
612    and maybe I want to be a writer. You know, talk about my life. And
613    (unintelligible) an author of some sort. I could create, and I could move things
614    down here and switch them and come back later, and I could change the
615    words, and there was -- it was fun, you know. But it was powerful, though. It
616    was a powerful tool. Then when I would turn it back in, it was just, oh, I
617    missed that -- that kind of outlet. And I tried to create it as right as I can, but
618    it just wasn't the thing.
619        Q. Some of these questions seem sort of irrelevant. I'll ask a couple of
620    them. I take it -- it seems obvious to me you wouldn't go back to--
621        A. No.
622        Q. Not using the computer?
623        A. No way. No way. No way.

624     Q. And has it hurt your writing in any way?

625     A. Huh-uh.

626     Q. No. Doesn't sound like it.

627     A. In fact, it enhanced it.

628     Q. Yeah. It seems--

629     A. And greatly.

630     Q. I think that's probably enough said there. And then do you think men

631 and women use computers differently when it comes to writing?

632     A. Well, I think you have to in the world of education. I think if you're

633 working with kids, I think men and women have to use it for writing. I don't

634 think they think any different. I think it's just required that we have to write.

635     Q. I mean you--

636     A. So--

637     Q. Do you think that they use it -- do men use it differently from women,

638 and women--

639     A. I--

640     Q. You know, just got -- okay. E-mail. You told me a little bit about this,

641 and I'll give you a chance to talk about it some more. So what has your

642 experience with e-mail been like?

643     A. I first started e-mail two years ago, which was 1997, and I think I

644 might've explained to how I was feeling left out with all my friends. And e-

645 mail is so much better than going to the phone because I don't have to deal

646 with press "1" press "2" -- all that crap. Relay -- it's there for me when I don't

647 have a computer or if I don't know somebody's e-mail address, I'll use my

648 TTY to relay. But it takes too long for me. If I need to find out something

649 right away or I need somebody to respond to me within the next day, I can

650 always e-mail. I use that mostly with my friends, but I'm going to start using it

651 with my colleagues because using the relay kind of freaks people out. And it's

652 also a second person there. I think people feel intimidated by that. And I'm

653 not sure how to conduct the conversation when there's a third person there. I

654 think it would be intimidating for people to do that. But people can get

655 through to me more directly through e-mail. It would just -- it would be even

656 way better if TTY. I don't have to go through the phone. And things happen

657 more promptly through the e-mail. Even though it's not like (unintelligible),

658 somebody's not there, but they're sure to answer, you know, back. E-mail

659 distance people? No, I don't think it distance people. I think it brings them

660 closer. I feel a lot more closer to my friends now, because one's far away from

661 each other. We don't live in the same college town anymore, but we still are

662 keeping updated with each other's happenings, and we can set up reunions

663 every year, and then we get caught up, and we plan it together, not just one

664 person trying to take over. And I think it helps people communicate big time.

665     Q. How? In what ways, do you think?

666     A. Because it's so much quicker. It's right in your very own home, and

667 you don't have to dial. Hey, it's just so much more efficient. Nobody writes

668 letters anymore, and I think people actually perform better on the keyboard

669 than they do by hand or -- a lot of people have a hard time expressing
670 themselves if they're on the phone because they're talking one to one to a
671 person. But on the e-mail there's so much you can share. There's almost like
672 a veil between two people, and you don't have to worry about what their
673 immediate reaction will be, if at all. You'll see their reaction in a delayed way,
674 but I think people are more open -- more open, and people are basically shy.
675 There are some people who are (unintelligible) shy that talk on the phone, but
676 express themselves better on paper. I think it helps people communicate, but
677 sometimes it's so hard to do it, to say it. It's easier to write it and then send it.
678     Q. Can you describe a particularly successful or unsuccessful e-mail
679 communication?
680     A. Successful e-mail communication would be -- I can't think of a
681 particular one. But if I need a piece of information there al -- I think the best
682 one so far -- I've been asking for people's addresses for my wedding
683 invitations.
684     Q. There you go.
685     A. "Oh, gee. I lost your address. Can you give it back to me?" "Yes, I
686 can." They'll e-mail it back to me. It's been awesome.
687     Q. Any unsuccessful ones where things have kind of gone awry?
688     A. When I don't have it.
689     Q. Unsuccessful is not having e-mail. Okay.
690     A. I don't think I've had any unsuccessful experience with e-mail yet.
691 That's what's amazing me. I keep waiting for -- waiting for it. But I think the
692 most unsuccessful is if I don't have it.
693     Q. Fair enough. So here's that men versus women question again. Do
694 you think men--
695     A. I don't--
696     Q. And women use it differently?
697     A. See any differences, really.
698     Q. Here's one. Do women use e-mail differently with other women than
699 with men?
700     A. You mean do women use e-mail with women different than they do
701 when women with men?
702     Q. Right.
703     A. I think women may do it on more of a personal basis. But men -- it's
704 more businesslike, I think. Most of my e-mail contacts have been women.
705 That's interesting, because maybe that's just what I'm limited to, just my -- my
706 girlfriends and myself. I have yet to use it with men. So I can't really -- I
707 think -- I tried e-mailing my cousin. I wanted -- I was more in a chit-chat
708 mood. And then it was more, like, "Well, I gotta go. Bye. Gotta work."
709 Maybe that will be true. But I would like to see what -- it will be interesting to
710 see what men do with e-mail. That's funny that I think about it. Most of -- all
711 of them are women, actually.
712     Q. Fair enough. Our final section is on the Internet. Here's a nice broad
713 question. What do you think of the Internet?

714    A.  If you asked me that question two years ago, I would've said, "I hate
715    it." Because it was just -- I thought, oh, my God, with all the different
716    addresses, different codes, and I'd have to use, like, HHT -- HTTP dot -- blah,
717    blah, blah, blah -- till you get into something to find out -- screw it.  Why
718    would I have to know these little special codes and addresses and all that?  But
719    now I've discovered just a word search for what, and then I could put in this is
720    what I want to find out, and it comes up.  I say, "Yay." I didn't have to -- the
721    only time I'd have to look at it, and then I could type it while I look at it, and I
722    would still get in I could write it down.  It's funny because that's -- that was
723    the first thing that bothered me.  The second thing that bothered me was so
724    much information to be on that Internet, especially things that we don't want
725    in society, such as pornography and bomb-making recipes.  And now it
726    doesn't bother me as much, except for if I have to electronically mail my bills
727    or -- I would be cautious with that because people could have -- could break in
728    and gain access to it.  I probably wouldn't want to use it for that purposes.
729    You can call me -- I'm pretty cautious with this, because it's like -- to me, it's
730    like the wild west.  There aren't many regulations yet developed for -- I use it
731    with caution and what purposes that is -- such as, you know, using it for
732    research and that -- that's all I'm interested at this point.  I would wait until
733    they come up with some kind of ways to block it or to -- I mean I'm
734    sure -- well, they have.  But other regulations or rules for people who do break
735    into -- to the privacy, and I want ways to protect myself.  I want to know
736    what's out there first before I start to use it for, like, mailing my bills and going
737    into my banking account.  I'm a little hesitant on that, because everything you
738    have -- it's one thing that freaked me out one time, was my best friend -- she
739    had no harm intended for this.  But she wanted to find out where I was living
740    now.  She found it on the computer -- the Internet.  I thought, huh?  And I
741    thought, oh, my God, you know, how did she find out?  And she only wanted
742    to know where I lived.  But what about other people?  That's the only thing
743    that bothers me.  But information is so much part of our society, and
744    it's -- anything you say, anything you type -- it's all on the computer, and it's so
745    much more readily accessible.  It's a little scary.  But on the other hand, there
746    are so many wonderful qualities of the Internet where I could find out -- if
747    there's something wrong with me, I could find out on the computer just like
748    that.  It's better than an encyclopedia.  It's way huger than an encyclopedia.  I
749    can use it for almost -- if I want to find out about anything, I'm realizing that
750    now I can do that.  I'm starting to use it for lesson plans slowly, but, you
751    know, I'm just (unintelligible) yet to spend the time to (unintelligible) -- find
752    out about weather.  I can find out about so many different things.  For me it's
753    just information.  Newspaper -- my newspaper is my library.  And that's all I'm
754    interested in using it for right now.  Chat rooms -- I'm not interested anymore.
755    I tried it a few times -- was turned off by the people who pretend to be
756    somebody -- they turned out to be real jerks.  And -- nah.  It's a real dangerous
757    thing, I think.
758    Q.  How so?

759    A.  Oh, suppose if you were talking to somebody and you were to reveal a
760    few things about yourself, and then that other person isn't who they seemed to
761    be, that's -- no, I would be a little bit nervous about that. And the language
762    that's on there is just terrible. I just wasn't interested anymore. I mean it's
763    nice to be able to talk to somebody, but not in such gross ways or the
764    language -- it's like, ahh. You know, I don't have time for this.
765    Q.  Yeah. But the sorts of people you meet--
766    A.  Um-hum. I mean, unfortunately, you can't screen out people. If
767    you're interested in talking about cats, and all they'd want to talk about is sex,
768    well, I'm not here to talk about that. So you don't know if the people are
769    being honest or truthful, and you can't see their faces. You know,
770    that's -- shopping, I would not like, because I have to see what I'm purchasing,
771    what I'm ordering. I used to order catalogs. But I found out if you order
772    something through catalogs, it's not what you -- things are not like what they
773    seem. I have -- especially therapy materials. I have a hard time ordering them
774    because I can't look at the therapy material till I get it. (unintelligible) you got
775    extras and send it back. That's a pain in the neck. I want to look at it to see if
776    I can use it for my kids. Then I will order it. But it's not in front of you for
777    me to look through to see if the pictures are appropriate, to see the work, the
778    language are appropriate. I'm not interested in shopping, and I'd
779    rather -- I -- I'm old fashioned, I guess. I'd rather see it in front of me and
780    (unintelligible). If it's made out of a material, if it's made well, and I -- I'd
781    rather not do shopping on the Internet. News -- I certainly would do it.
782    Certainly would do it.
783    Q.  And then just, overall, I guess, number 41, do you see the Internet as
784    harmful or helpful or--
785    A.  I think the Internet is helpful as long as they are cautious. As long as
786    they start -- as long as they put rules and regulations, I think it will be very
787    helpful.
788    Q.  And what kind of rules and regulations would you like to see?
789    A.  The kinds of information that could be on there, ways to -- how to
790    track people who are abusing it. I'd like to see ways to protect ourselves. I'd
791    like to know if somebody's done harmful things on the computer will be
792    followed through, instead of just, oh, well. I want people to have options, to
793    have -- to close down -- to limit other people's access, wanting to
794    protect (unintelligible) I might have said that.
795    Q.  I guess the interesting thing that comes up is how do you provide
796    protection and privacy for some individuals while tracking others? You know
797    what I'm saying? The people who aren't misbehaving, how we want some
798    privacy and protection, but then the ones who are supplying bad stuff?
799    A.  Because--
800    Q.  It's hard to regulate that.
801    A.  (unintelligible) over e-mail. How do you protect yourself against that?
802    And I guess, you know, (unintelligible) in the mail. But it's so readily available,
803    right into your home.

804      Q. There's something very personal about that.

805      A. And it's very personal. It's like somebody sneaking into your own
806 house without even being there. But it's worse than that. They cold get into a
807 lot of things that they shouldn't know. I will be really cautious with that.
808 There's been so many codes broken, viruses, and all of that. I intend to be real
809 hesitant -- real careful about doing that.

810      Q. And one more time for men versus women. Do you think men and
811 women use the Internet differently?

812      A. I don't think they use it any differently, but for different reasons
813 maybe. Oh, like, women like shopping. They go shopping more than the men
814 do. Maybe they look for, like, recipes and crafts (unintelligible) more than the
815 men do. It just depends on what their interest -- I think the interest -- subject
816 areas are different for each men and women. But I don't think the way of
817 using it is any different.

818      Q. That's it. But if there's anything you'd like to add, either about the
819 interviewing process or just anything at all about computers, feel free to add a
820 final statement.

821      A. Okay.

822      Q. Anything else you want to--

823      A. No.

824      Q. Great.

825      A. I -- you know, that talking about computers tonight has been really
826 interesting, because I finally discovered and rediscovered, and made me feel
827 better, what was wrong with me learning computer. Why did it take me so
828 long to learn it? And I discovered for the first time it wasn't just me. It was
829 my need to learn that, the type of instruction that I had. And being not being
830 able to learn about computers made me angry for a long time. It made me feel
831 really insufficient, and it scared me, because I thought, well, how am I gonna
832 make it in my job if I don't learn this? And I felt like there weren't many
833 options, there weren't ways for me to tell me what I tell people what I needed.
834 They weren't meeting my needs on what I was learning with the computers. I
835 don't know what classes are like now. But they made me very angry for a long
836 time, and I'm not as angry now, because now I'm talking about. Before I
837 couldn't talk about it because I was embarrassed because I thought there was
838 something wrong with me, you know. I couldn't figure out why I couldn't get
839 motivated or be willing to learn more about computers. I just thought that
840 people were -- how to be (unintelligible) or had to have money to get into
841 computers, which I didn't have a whole lot of money to get one. It made me
842 angry for a long time, and I didn't like it. And I have to appreciate my school
843 districts. Each one of them I've been in, they've been the biggest influence,
844 because it's there. The help's there. And I kind of have to pat myself on the
845 back for being able to jump in and learn. And now I can look back, and I'm
846 pretty proud of myself for not giving up entirely and just making it through
847 somehow. I wonder how it is for deaf people. I mean I can imagine -- it
848 depends. I think with deaf people they learn computers quicker because it's

849      more visual. But for me, I'm both hearing and deaf. My -- it wasn't desperate.
850      I didn't feel desperate enough to need it as much as the deaf people, because I
851      could hear. I didn't seem to need it, but now -- it's hard to explain. It's -- see,
852      my needs are different than the deaf people. Deaf people can have
853      interpreters. I couldn't have interpreters because I was raised in the world
854      where I didn't have anybody. I didn't learn sign. That -- I think that if I had
855      learned sign, that might've helped. But I was also -- I could -- you know, I
856      could speak. Deaf people can't speak. So they have the access to the
857      information which I didn't have the access, because most people thought, oh, I
858      didn't need interpreters. Even including myself, because I was talking, and I
859      thought I'm not deaf enough to have an interpreter. So I think that -- I think
860      the biggest thing about my learning computer was my own self with my own
861      needs, what did I need my own self -- identification. Who am I? Am I deaf or
862      hearing? Got into the way of it. And also my not being able to follow what
863      was happening in class and the type of help I was getting. I think it was
864      just -- not just one factor, but it was a series of several -- more than several
865      factors affecting this. I think this makes my case a little bit different than
866      everybody else. But I could imagine people who aren't like me are frustrated
867      with access needs and -- there's a lot of them out there. And sometimes I've
868      seen a lot of kids that have the same -- similar situation that I have. They
869      don't use sign language. I know two deaf boys, and it's like looking back
870      into -- in the past. And I'm thinking, oh, boy, they're experiencing the same
871      thing. They don't use sign language because, well, they're in the hearing world.
872      They can talk. I don't need it because I can talk, but yeah.
873          Q. Talk and read lips and--
874          A. It's not the communicating to other people as how you get
875      information to yourself. And it's a big hassle. And 1980's they started having
876      (unintelligible), and in the educational world you had interpreters, or you had
877      note takers. And I had an FM system, which is like a personal microphone. It
878      helped, but you couldn't get the questions from the other kids. So you're
879      limited in access that way. And now they have captions in the classrooms. At
880      the college level it should have it for all levels of school. I think they're still
881      working on it. You know, as technology advances, it's getting way much
882      better than it is -- has been. I can remember a time there was not captioning
883      available at all. This was before 1980. And (unintelligible) media
884      entertainment deaf people were enjoying were going to foreign films. Pretty
885      pathetic. But now there's captions built in TV's. So -- but in terms of learning
886      and classes and -- still limited. I sometimes wish that people could take
887      advantage of technology for people who -- you know, like myself. Like going
888      through a drive-thru. All I hear is a voice, and I order, like, a hamburger. And
889      all I'm gonna say is, "I want a hamburger, and I want a pop, and that's it."
890      And I go on without answering the next few questions because I don't heard
891      them.
892          Q. Right.

893          A.  Now, why couldn't they have a screen and have, like, captioning?  I
894     mean--
895          Q.  How hard would it be?
896          A.  How hard would it be to create such, you know, a thing?
897          Q.  They just don't think about it.
898          A.  And I hope the next step in computers, other than e-mail, is that that
899     person can stand in front of a computer and sign to their friends through a
900     computer, through video.
901          Q.  Yeah.  Well, there's the kind of video conferencing that's out there,
902     you know.
903          A.  Oh, there could be huge, huge -- TTY's now are collecting dust.  We
904     only have to use them when we know that somebody doesn't (unintelligible)
905     or -- but I think TTY's are going to be just absolutely obsolete in the home,
906     but except people may have to carry it with them when they talk on a pay
907     phone or something like that.  But who knows?  Pay phones might be
908     different now.
909          Q.  Yeah.  Or, you know, people -- well, I suppose, you know, if you have
910     a laptop and you can get your Internet connection somewhere--
911          A.  Um-hum.  Yeah.
912          Q.  That way, you would still use e-mail or something?
913          A.  Um-hum.  And I think phones are going to be gone, too.  I think, you
914     know -- I think computers are going to be really interesting the next century.
915     And I'm looking forward to that.  And I feel a lot more literate, but I still have
916     a hard time explaining computer terms like hardware, DOS, and all that.  I'm
917     still going to be that way.  I just -- I'm more interested in using it, rather than
918     just explaining.  Sometimes I used to think of people who can explain
919     computers in such terms are such showoffs.  I mean that's how I -- I mean I
920     don't mean to come across -- it's not bitter.  But it's just, like, at the time when
921     I was angry, that's all I thought.  You're just a showoff.  All you want to do is
922     just show off.  Just show me how to use the damn thing instead of just
923     showing me how much you know, and blah, blah, blah, blah.
924          Q.  I think a lot of people would have felt that way.  Well, great.  Thank
925     you very much.

# Appendix B: Bonnie

1      #1. Q.    Okay. So the first set of questions -- there will be four -- are
2    about yourself and your relationship to technology. So first, what images does
3    the term "technology" bring to mind?
4      A. I think technology for me brings to mind computers, cell phones, all
5    kinds of electronical gadgets that they have nowadays.
6      #2. Q.    And do you consider yourself mechanically or technologically
7    inclined?
8      A. Maybe slightly mechanic -- mechanically inclined. I don't know about
9    technologically.
10      Q. So you see those as kind of two separate things?
11      A. I do, yeah.
12      #3a. Q.    So what leads you to believe that you're somewhat
13    mechanically inclined?
14      A. Oh, as a kid when things would break and my mom couldn't fix them,
15    I usually could.
16      #2b. Q.    And what makes you consider yourself maybe not necessarily
17    technologically inclined? I mean that's what I was getting from your response.
18      A. Well, I don't know, except the word "technology" scares me a little.
19      Q. It's kind of all encompassing?
20      A. Yeah. Yeah. So I don't -- you know, I can't narrow it down. So I'd
21    just say, well, probably I'm not inclined.
22      #2c. Q.    If I made it more specific, taking one of your images here of
23    computers, cell phones, if you think of those things as technology, are you
24    technologically inclined?
25      A. Maybe only slightly, in that I--
26      Q. Slightly?
27      A. Catch on fairly easily with computers.
28      Q. So with -- when it comes to operating technology, you feel pretty
29    comfortable? Is that -- or reasonably--
30      A. Reasonably comfortable. I don't fear it. I think it's something I can
31    learn.
32      #3. Q.    And who and what have influenced your beliefs about this?
33      A. Well, probably my boss at work for many years. When computers
34    came about in the school district, she informed me that we needed to be using
35    computers, and that she wasn't going to be -- she wasn't going to be the one to
36    learn it. So--
37      Q. Well, maybe I should interview her, too.
38      A. So that probably I would have to be the one that learned it.
39      #4. Q.    So getting more specific, then, as far as technology goes, what
40    does the term "computer" mean to you?
41      A. The term "computer"?
42      Q. Yeah. When you think of the word "computer"--

43     A.  I think -- when I think of the word "computer," I think of a keyboard
44 with a monitor that does miraculous things.
45     Q.  Do you care to elaborate, or is that pretty much--
46     A.  That's pretty much--
47     Q.  Your statement on that?
48     A.  My statement on that, really.  I don't really know any technical words
49 to describe it.
50     Q.  Well, I am asking what it means to you.  So--
51     A.  Yeah.
52     #5 Q.     Whatever words you choose are perfectly fine, and that goes
53 for the rest of the interview.  Okay.  Great.  So this next series of questions is
54 about your own early experiences with computers.  So if you can kind of
55 remember back, I'm going to kind of take you back to your first times, if you
56 can recall those.  So this is just kind of descriptive, maybe.
57     What was your first experience with a computer like?
58     A.  Frustrating.  Very frustrating.
59     #6a. Q.     Okay.  So moving on, when and how did you first really learn
60 to use a computer?
61     Well, it must've been -- time goes so fast, I don't -- ten years ago, maybe, I
62 guess.  It's a guess.  And it was in the resource room at North -- XX School in
63 XX School District.  Actually, we had gone to a workshop, and they had this
64 man get up there, and he talked so fast, and he went through millions and
65 millions of things, and then told us that now we knew everything, and we
66 could go back to our schools and operate this computer.
67     (laughter)
68     Q.  Oh, well!
69     A.  So after we got back to the school, I could still practically do nothing.
70 Maybe turn it off and on.  That's about it.
71     #6b.  Q.     So that kind of flows into my next questions.  What questions
72 and concerns did you have at that time?
73     A.  The questions and the concerns were what did you do after you turned
74 it on?  What was the next step?  I mean I really didn't even know that much,
75 you know.  I had -- I had taken -- can I back up a minute here, if it's okay?
76     Q.  Yeah.
77     A.  Actually, before this -- oh, maybe five years before this, I had taken a
78 class in computer programming.  But we didn't really learn that much about
79 the machines, other than turning them off and on.  And then we -- it was more
80 graphics.  In fact, the whole thing was graphics.  So I maybe learned how to
81 plot graphs and make, you know, pictures of things.  But I didn't really learn
82 anything about word processing or any other aspect of the computer.  So
83 when it come to what they were asking of us, was to do a canned program, to,
84 we -- had to know how to pull up all these things out of the program, and
85 actually what -- if you knew how to do that, it wouldn't be so hard, because
86 you were just plugging in blanks.  But I had no idea how to pull up the
87 program or get one step from the next or anything like that.  So--

88       Q. And that was because this man--

89       A. Just went--

90       Q. Just went way too fast?

91       A. Went way too fast, and nobody in the whole group understood it.

92 Everybody was just looking at one another, like, huh? Right. Shrugging their

93 shoulders. They didn't get it at all, either. Nor did my boss, who was with me,

94 understand it in the least. Of course, she was expecting me to--

95       Q. There may have been a little disincentive for her to learn, there. Okay.

96 Let's see. Well, I'm gathering from what you've said that you eventually did

97 learn to use this program?

98       A. Right.

99     #7a. Q.   And in that process who or what helped you find out what you

100 needed to know?

101       A. The management team realized after they had gone through this futile

102 attempt to teach us computers in that manner that it just didn't work at all. So

103 someone down at the district office who was familiar with this -- in special

104 ed -- who was familiar with this program, decided to write up directions to

105 follow. And actually I was beginning to learn from that, just by following each

106 specific direction and going through it on the computer as I did. That's how I

107 began to learn.

108       Q. Kind of a step-by-step--

109       A. Kind of a step-by-process.

110       Q. Almost a tutorial?

111       A. Yeah, it was--

112       Q. It sounds like.

113       A. It was a tutorial-type thing that they wrote up.

114       Q. Getting back to that class that didn't work so well, was there any kind

115 of hands-on work there, or was it basically just him talking to you about it?

116 How--

117       A. Well, he talked to us about it, and then we were sent to computers.

118 But, like, maybe a half a dozen people at a computer -- at one computer.

119       Q. Yes.

120       A. And not everybody got hands-on. And people that already knew it

121 were just running through it and saying, well, this is how you do it -- da, da, da,

122 da, da, da. And those of us that didn't know how to do it still didn't know

123 how to do it, and--

124       Q. Right.

125       A. So -- yeah.

126       Q. That's the kind of thing that can happen, certainly.

127       A. Yeah.

128     #7b. Q.   Was there anything else that you can remember, in addition to

129 this book of procedures that kind of helped?

130       A. The thing that helped me the very most was one of the instructors

131 from the junior high -- a computer instructor -- came down, and he said, "The

132 only way you're going to learn -- really learn this program, is to do it."

133    Q. To use it?

134    A. Yeah. "Is to do it yourself. And so I'm here to run you through this

135    program. You sit at the computer, and I'm going to tell you step by step what

136    to do." And when that happened and we went through from the beginning to

137    the end, putting in IEP in -- in the computer, that's when it really sank in and

138    became easy for me. And along the way he also gave me a lot of shortcuts and

139    things to use to get into various programs back and forth. And I took notes,

140    of course, and that type of thing. And that helped more than anything.

141    Q. So the--

142    A. And once that happened, I felt -- finally felt a little bit comfortable

143    with it. And then it was just a matter of using the program enough times to be

144    really comfortable with it.

145    Q. So you felt like you had something that you could kind of retain and

146    build on--

147    A. Right.

148    Q. At that point?

149    A. Right. So I'd say the tutorial and then the actual hands-on with a

150    teacher or coordinator -- whatever you want to call--

151    Q. Yeah. Sort of a guide?

152    A. A guide--

153    Q. Or a coach, maybe?

154    A. Is a good word -- coach, yeah.

155    #8. Q.    I think you've partially answered this. But who or what hurt

156    your ability to find out what you needed to know?

157    A. Who would hurt my ability?

158    Q. Yeah. What made it harder to learn what you needed to know. I know

159    you mentioned that first class--

160    A. Yeah.

161    Q. Sounds like it wasn't too helpful. But--

162    A. Well, I would say just what made it hard -- the hardest to learn was just

163    lack of proper instruction. Once I finally got the written tutorial and the guide

164    or coach to come in, it--

165    Q. Yeah.

166    A. It didn't seem that difficult anymore. It was just -- instead, it was kind

167    of like thrown in your lap, and, you know -- and somebody ran through it 100

168    miles an hour, and you didn't know what they were talking about in the first

169    place. And so, you know, it didn't mean anything to you. So your notes didn't

170    mean anything to you.

171    Q. Right.

172    A. So that's what kind of made it the hardest.

173    #9. Q.    In addition, you've mentioned kind of the tutorial where you

174    worked by yourself and then the hands-on with coaching. Was there anything

175    else that would have been helpful that you can think of now that wasn't

176    available at the time?

177      A. Well, just -- you know, the only thing I can really think of

178    is -- would've been to have somebody available to ask questions to right there

179    in the same room or in the same school with me. However, we could call the

180    district office in special ed and ask questions if we needed to if you really got

181    stuck.

182      Q. How was the response time on that, or did you ever use it?

183      A. Yeah. I used it. It was not bad. I mean lots of times if -- unless they

184    were just terribly, terribly busy, the gal that wrote the tutorial would take time

185    to come on the phone, and she would just, you know, have you go to your

186    computer and take you through step by step.

187      Q. So not too bad, then?

188      A. Huh-uh.

189      #10. Q.    So the last question in this early use section -- well, this may be

190    from an early experience or a more recent one. But what has been your best

191    or your worst experience with a computer? You can tell me one of each, or if

192    either one stands out in your mind more than the other. So your best or worst

193    experience with a computer.

194      A. Well, the best experience is to just go through an entire IEP and not

195    · have any hangups, and everything just goes completely smooth, and in a

196    matter of a half an hour you have it out or less -- less than half an hour you

197    may have it typed and out of the computer. The worst possible scenario--

198      Q. Can you think of a specific one or just one that happens periodically?

199      A. Well, it's just -- you're doing everything you're supposed to do on this

200    computer. And for some reason it doesn't react the way it's supposed to react.

201    And this was not uncommon in this program that they had, that it would work

202    right 55 times, and the 56th time, why, for some reason it wouldn't, you know.

203    And then it was, again, a very frustrating thing to try and figure out why it

204    wouldn't work. And sometimes you could spend untold time. I mean

205    anywhere from a half an hour to two hours trying to go back through your

206    steps and get it -- you know, get it straightened out. I finally learned just

207    through elimination process. I mean I could have called the person all the

208    time, but I don't -- didn't want to bother them unless it was absolutely

209    necessary. So just in the process of elimination I just learned that the best

210    thing was to just dump it and start all over again.

211      Q. Because?

212      A. Because the next time it might work. But it wouldn't work just going

213    back over that one step. You had to just dump the whole program. I mean

214    just close -- close down completely.

215      Q. And just--

216      A. And just start all over again.

217      Q. I wonder if that's part of the problem, maybe, with a canned program

218    instead -- it's because it's just set up to be automatic, that maybe it really is

219    difficult to back in and find what went wrong.

220    A.  Yeah.  Yeah, because I could call -- I have called Stacy -- and that's
221    who was at the -- available at the district office.  And she's taken me back
222    through things, and, you know, it still didn't work.  So--
223         Q.  Start over?
224         A.  Start over.  And, you know, usually, if you shut it clear down, you
225    know, and start totally over, which is a waste of time.  But you wouldn't -- you
226    don't waste as much time that way as if you do spend two hours trying to
227    figure out what was going on.
228         Q.  Trouble-shooting?
229         A.  Yeah.
230    #11a.  Q.  No fun if there's no payoff.  Okay.  Let's stop for just a
231    minute.  So picking up on the next section, which is about your current use of
232    and relationship to computers.  First, have your thoughts and feelings about
233    computers changed from these early experiences to the present?
234         A.  Oh, yeah.  A lot.
235         Q.  And so, you know, how?  Can you give a few examples?
236         A.  Well, I guess I said early on that I really, you know, thought that I -- I
237    didn't fear them.  I thought that I could learn to use them.  And I did.  But I
238    went through some really frustrating times, and now I don't find the computer
239    nearly as frustrating.  I realize that it's only as smart as the person putting the
240    information in.  It's not going to do anything strange or weird.  You
241    know -- well, I won't say that it won't do anything weird or strange.  But I
242    mean it's not going to do anything out of the ordinary -- no more than what
243    you put into it.  I mean, you know -- and I don't know that I didn't ever
244    know -- not know that.  But for some reason it always had kind of a mystique
245    about it, you know, more than -- but now it doesn't have a mystique to it.  I
246    mean I -- it's -- it seems much more simplified and easier to deal with.
247         Q.  I don't know if you've heard of people who -- you know, sometimes
248    initially when you start using a computer you're almost afraid that you can
249    break it somehow by hitting the wrong keystroke.
250         A.  Yeah.  Or you think you're going to lose your whole program.  You're
251    going to wipe out the whole program that somebody spent millions of dollars
252    putting together.
253         Q.  Right.
254         A.  Or, you know--
255         Q.  Inadvertently?
256         A.  Yeah.  Yeah.  And now you -- I realize that that can't happen.  And
257    there's nothing that you can do that probably can't be fixed.
258    11b.Q.    Yeah.  That makes a big difference once you realize that.
259    Okay.  And as a followup to that, you've partially answered this.  But I'll ask
260    this anyway.  Who or what has influenced this change?  What do you see as
261    causing you to feel differently?
262         A.  Just experience on the computer.
263         Q.  So using it and just realizing that--
264         A.  Yeah.

265    Q. Over and over again that nothing bad has happened?

266    A. Right. And then teaching someone else to do my job just before I
267 retired, you know, made it even -- seem even simpler to me, because I had to
268 convince them.

269    Q. Of the same thing?

270    A. Of the same thing that I feared when I started it, that those things
271 weren't going to happen, and it was -- you know, it was way easier than it
272 seemed.

273    Q. So that sounds in a way like something that you would have liked when
274 you were learning, is someone who actually knew about this exactly the way
275 you were going to be using it who could tell you?

276    A. Right. Remember I said back--

277    Q. Yeah.

278    A. If I had had someone in the room that knew it. That's why I made
279 that comment, because I know when I taught it to the person that took my
280 job, you know, she caught on quite -- it seemed quite easily, because I was
281 always there to answer her questions, and I immediately put her on the
282 computer, like the coach had done with me, and ran her through the program,
283 and, you know--

284    Q. Then you were there for--

285    A. Yeah.

286    Q. A number of days or weeks?

287    A. A year.

288    Q. Okay. A whole year?

289    A. Yeah.

290    Q. So--

291    A. A whole school year, yeah.

292    #12a.  Q. OJT with an on-site coach. Perfect. Great. So you mentioned
293 that you're retired. So I'll let you decide how you want to answer this
294 question. It's how and where do you use the computer? What primarily do
295 you use it for? So your choice. If you have one at home, you can focus on
296 that. Or you can tell me more about how you used it on your job. I want to
297 know about both. If you have a computer at home, I'll want to hear about
298 that, too.

299    A. Yeah. Before I retired, it was mainly used in the -- like I said, the
300 canned program of just putting IEP's -- individual educational programs -- in
301 the computer and printing them out, because there had to be printed copies
302 for the district office, for our files, and for the parents.

303    Q. An individual education program is -- what is that for?

304    A. This for learning disabled children. I worked in what we called a
305 resource room that dealt with learning disabled children.

306    Q. So the IEP was like a standard form--

307    A. Right.

308    Q. That needed to be filed--

309    A. Right.

310   Q. On a regular basis?

311   A. Yeah. And there's an annual review. So this had to be done once a

312 year. The students have to be retested, and new IEP's written. Then every

313 three years there had to be a total reevaluation and much more extensive

314 testing and a more extensive IEP written up.

315   Q. So what -- it sounds almost like it was sort of a data base for an

316 individual student.

317   A. Yes. Each student had one of these, right. Right.

318   Q. And then did it -- what kinds of information did it include? Was it

319 (unintelligible) program for the student?

320   A. Yeah. It had the testing results so the parent, as well as the district and

321 the teacher, could compare the growth each year of the student. And then it

322 also had a program for that particular student to try to meet specific goals.

323 The learning specialist had to write specific goals, and then the student was

324 going to try to meet those goals for each year. And then every third year, like I

325 said, got a little broader.

326   Q. Right. They kind of evaluated the overall--

327   A. Overall, yeah. And some students didn't requalify, but most of them

328 did, you know.

329   Q. So not requalifying means they no longer needed help?

330   A. They would -- it would -- they would no longer be in the program.

331 Right. They didn't always not -- not need help, but they maybe tested so they

332 were not learning disabled anymore. They were more a Title I student or a

333 different type of special ed.

334   Q. Different classification?

335   A. Yes. Yeah.

336   Q. So getting back -- so what you did was primarily input data for these

337 IEP's?

338   A. Correct. The learning specialist wrote up the data that she needed

339 inputted into the computer, and it was my job to put it in the computer and

340 print it out. Give us a beautiful copy.

341   Q. And as this learning specialist, the boss you referred to earlier -- who--

342   A. That's correct.

343   Q. I'm getting a feeling she didn't want to input these herself.

344   A. She's -- was not a good -- big computer fan.

345 12b. Q. Yeah. A potential interviewee. All right. So what about

346 home? Do you have one there?

347   A. Yes, we do. We have a personal computer at home, and the thing I

348 like to use it the most for is e-mail to my daughter who lives in a different

349 town. And we can e-mail back and forth daily, and it's just a nice way to be

350 able to communicate.

351   Q. So it kind of helps you keep in touch?

352   A. Yeah.

353   Q. Do you use the home computer for anything else?

354    A.  I use it for mainly e-mail and for, like, personal letters, writing
355  letters -- this type of thing.  My husband uses it more for putting in financial
356  data and spreadsheets, et cetera.
357    Q.  So we'll come back to e-mail a little bit later.
358    A.  Yeah.
359  #16a.  Q.   Where do you keep your home computer?
360    A.  We have a -- actually, it was an extra bedroom on the lower level of
361  our house, and we turned it into a den.  And it's kind of a computer
362  room/horn practicing room combination thing.  But we have our computer in
363  there.
364  #16b. Q.   Okay.  So why there?  Why do you have it in that room?
365    A.  Well, it's out of the way of the TV and traffic in -- you know, in the
366  main house.  And it's a quiet spot to get down and concentrate.  You can
367  concentrate on what you're doing without a lot of interruption.
368  #14a. Q.   Okay.  Do you talk to the computer at all?
369    A.  I haven't recently.
370    Q.  Have you ever?  And this goes for at home or at school.  Have you
371  ever--
372    A.  I don't know if I've talked to the computer.  I might have sworn at it.
373    Q.  Well, that's kind of what I mean.
374    A.  I might have gotten a little bit--
375    Q.  Verbalizing.
376    A.  Frustrated enough to verbalize at it a few times.
377  14b. Q.     So okay.  And I was going to ask, if you ever speak to the
378  computer or at the computer, how do you do it?  You know, what do you say,
379  and how do you say it?  Is it primarily swearing when you're frustrated?  Do
380  you ever talk to it at other times?
381    A.  Well, I may say, "Well, I can't believe this happened," or, you know -- I
382  mean I -- (unintelligible) I swear at it.  But I have said the -- you know, "I
383  really can't believe this" -- you know, that type of thing--
384    Q.  Yeah.
385    A.  On occasion -- when I'm not swearing.
386  #14.  Q.    I've been known to do the same thing.  So don't feel bad about
387  that.  Does your computer have a name or any one specific name?
388    A.  No.  Just the computer.
389  #15.  Q.    Okay.  And do you have a favorite joke about computers or
390  computer users?
391    A.  Oh, I've had lots of laughs about computer users.  My friend e-mails
392  me a lot of jokes about computer people and computers in general.  I can't
393  give you anything specific off the top of my head.
394    Q.  But you've seen a lot of jokes?
395    A.  I've seen a lot of jokes about computers, and some are very funny.
396  And some are too -- too close to the truth to be funny.  And some of them I
397  don't understand because I don't understand the computer that well, still.
398    Q.  Maybe about hardware or the internal workings?

399    A.  Yeah.  Yeah.  Different -- different things that come up with -- I really
400    don't know what they're talking about.
401    Q.  Have you seen the one about -- I think there's one about upgrading,
402    like girlfriend -- trading the program girlfriend 1.0 in for wife 2.0 and some of
403    the difficulties -- have you seen that one?
404    A.  No, I haven't.
405    #17a. Q.    Well, it'll probably show up in your in-box one of these days.
406    Who knows?  And wrapping up your relationship with computers right now,
407    how would you feel if you no longer had access to a computer?
408    A.  I think I'd feel cheated, now that I have become friendly with them.
409    They can make communication so much easier and available to a person, that I
410    really would feel cheated if I couldn't have one anymore.
411    #17b Q.    And so what would you miss the most?  You may have hinted
412    at that already.
413    A.  I would miss e-mail the most, being able to communicate with my
414    daughter and with other friends on a daily basis.
415    #17c.  Q.  And what would you miss the least?
416    A.  What would I miss the least?  Having the -- having the computer dial
417    up the network and finding that either there is no answer, or the line is busy.
418    #18a. Q.    That one goes at the top of my list, too.  So then next section
419    has to do with computers and gender.  Or you might look at it as computers
420    and personality type -- kind of depending on how you choose to look at it.
421    First off, do you think men and women use computers differently?  Just in
422    general.
423    A.  There -- in general, no.  You mean at work or -- are you speaking of at
424    work or for their own personal use or both or what are you--
425    Q.  Good point.  Well, can we -- is there a way we can start just, in general,
426    off the top of your head, do you think they use it differently?  And then we
427    might get more specific and give examples based on work and home.  So in
428    general--
429    A.  In general, I think there are definitely times when they do use it
430    differently, yes.
431    Q.  So maybe that's the question.
432    A.  Yes.
433    Q.  Is when do they use it differently and--
434    A.  Yes.
435    18b.  Q.    And when not?  So when do you think they use it differently?
436    A.  I think they use it differently for their own personal use at home.  And
437    I think more job related -- maybe more women inputting into computers than
438    men do.  I don't know.  I mean that's just a gender idea that I have that's
439    probably true.  But I would -- I was -- guessed that per job -- I mean it
440    would -- it -- whoever was doing the job, it wouldn't matter of gender.  They'd
441    probably have to do the same thing with the computer uses, the same type of--
442    Q.  And they would approach it pretty much the same for the same job,
443    you think?

444    A. I don't know if they would approach it the same. But what they
445 needed to come up with would be the same. The outcome would
446 needed -- would need -- is what I'm thinking of, I guess.
447    #18c Q. So I was thinking of -- when I asked about do they use it
448 differently, maybe a better word would have been "approach" it differently.
449 Do they use it in a different way? Do men and women use computers
450 differently? You hinted that maybe they tend to have different jobs related to
451 the computer, for one. So--
452    A. Yeah. Yeah. That would be my main thing. I think they'd have
453 different jobs that are related to the computer. Like, I would guess that
454 more -- more men would be programmers, and more women would be people
455 who input information. I'm not saying there aren't some of each, but I
456 would--
457    Q. Overall?
458    A. Overall, that there'd be more men that would be programmers on that
459 end of it, and the women would be more like inputting or secretarial-
460 type -- types -- using them to write up letters and make forms and so on and
461 so forth.
462    Q. So it sounds like when it comes to the workplace you see the
463 differences in the way men and women use or approach computers are
464 primarily task-related. It's depending on what kind of job they do, they
465 approach it differently?
466    A. That's correct. Yeah. That's what I--
467    #18d Q. So getting back to personal use, then, how do you think men
468 and women -- you said you thought they use it differently?
469    A. Yeah. I think women -- not always -- but women kind of tend to use it
470 more for e-mail, maybe keeping track of recipes -- this type of thing. Where
471 men seem to like to make spreadsheets, figure out financial possibilities in your
472 life, keep track of that type of thing.
473    Q. Maybe--
474    A. Understand what I'm saying?
475    Q. Oh, yeah. Exactly. Maybe check the latest baseball scores on the web?
476    A. Well, right. Yeah. And probably they use the web differently, too.
477 They'd be looking up different types of thing on the web. Men might be
478 looking up baseball scores, the price of a new boat motor, what's the best deal
479 on cars -- that type of thing. Where women might be more interested in
480 health-related subjects and recipes and what they can buy, perhaps. These are
481 just guesses.
482    Q. Although I do recall you mentioned boat motors for men. So there
483 may be some purchases going on there, too.
484    A. This is kind of how it is in my house.
485    #19. Q. Okay. So here's, again, on the gender issue, this is sort of a
486 general question. Does one sex or gender enjoy computers more than the
487 other?

488    A. I really don't know the answer to that question. Overall, of people I
489    know, I know it's pretty even down. I mean I know as many women that are
490    interested in computers as men. I don't know. I really don't know the answer
491    to that question. I don't even--
492    Q. Well--
493    A. Did you ask -- state it again. Did you ask in my opinion, or what did
494    you say?
495    #19 Q.    Yeah. Just your opinion is all I'm after on this, anyway. So
496    does one sex or gender enjoy computers more than the other?
497    A. I'd say not necessarily.
498    Q. It sounds like maybe more isn't the issue, but maybe just differently?
499    A. Um-hum.
500    Q. Kind of what you were saying--
501    A. Yeah. Yes.
502    Q. In the previous--
503    A. Right.
504    #20. Q.    Good. This one is -- it's a little more abstract. So let me know
505    if I need to clarify it. Are computers -- and by "computers," let's include
506    software programs -- you know, whatever you're used to interacting with. Are
507    computers inherently designed to be more user-friendly for people who think
508    in a certain way? Now, ways you could divide up different types of thinking,
509    you could say male or female. You could say linear/non-linear is sometimes
510    the way that gets divided up. Or, you know, designers versus users of
511    computers. So rephrasing it, are computers inherently designed to be more
512    user friendly for people who think in a certain way or have a certain type of
513    mind-set?
514    A. I think that's probably true. I think perhaps the more logical thinker
515    has an easier time with computers.
516    Q. So more logical, kind of linear--
517    A. Linear, yeah -- versus abstract thinkers. I think abstract thinkers might
518    tend to want to make more out of it than there is.
519    Q. So maybe I should ask -- could you tell me a little more about what
520    you see as an abstract thinker? Could you describe what that is, just either
521    through examples or--
522    A. Well, I don't know. I think if somebody is an abstract thinker who
523    thinks -- let's see. They don't necessarily think in black and white
524    logical -- black and white or linear. Plus, they think of -- they think in a way
525    that they see maybe the result before -- and not result -- and not a logical way
526    to get to it.
527    Q. They know -- they maybe know--
528    A. They know they want.
529    Q. The result they want.
530    A. What they want.
531    Q. But they can't visualize?

532    A. But they don't visualize the steps to get there. As compared to a
533    logical thinker or linear thinker -- the way I think of it is one that maybe even
534    sees the steps before they see the end result. Does it make any sense?
535    Q. Yeah. I think so. So logical might be -- another word that would fit in
536    that category might be methodical?
537    A. Methodical.
538    Q. Sees the steps -- yeah. I think I see what you're getting at. People who
539    have a hard time visualizing -- well, you just said it. I mean--
540    A. Yeah.
541    Q. People who have a hard time visualizing the steps from point A to
542    point B have hard time with the computer?
543    A. Right. And they're -- to me, that's a more abstract-type person.
544    #22. Q.    Okay. Yeah. I just wanted to clarify what you meant by that.
545    So in that case, given this logical versus abstract distinction, are computers
546    inherently designed in a way that makes it easier or harder for you to use the
547    computer? So another way of looking at it is which camp do you fall in? Are
548    you either of those, or are you a little of both?
549    A. I think I'm -- I think I'm more logical. I need to know how I'm going
550    to get there before I even think about what the final result is. I'm -- you know,
551    I need an overall picture, I guess, of the final result. But I need to be able to
552    know how -- exact steps to go back through logically and get to that end result
553    before I discuss the end result very much.
554    Q. And you think that probably is one reason maybe why it's easier for
555    you to use the computer than some other people you know?
556    A. Right. I think that's why -- to me, that's why it was easier for me to
557    pick up on it, yeah, than some people who just are -- are just afraid of the steps
558    or--
559    Q. The details?
560    A. The details that have to go into it. The details is the word I was
561    looking for, I guess.
562    Q. Yeah. Some people kind of are more big picture people.
563    A. Yeah.
564    Q. And they can't be troubled with details?
565    A. Details, yes. And where other people need the details.
566    Q. And you're thinking people who want the details and are good with the
567    details are probably better with computers?
568    A. I think -- yeah, I would think it would be easier.
569    Q. Or have an easier time?
570    A. Yeah. Easier time learning than -- yeah.
571    20. Q.    Yeah. Good. And wrapping up the gender section here, do
572    you think of computers as he, she, or it?
573    A. It.
574    Q. And why is that?
575    A. Because it's a machine, and I--
576    Q. A machine.

577        A. You know, it can have no gender.

578        #23., #24, #25 Q.Fair enough -- no confusion there. I'm going to stop

579 for just a moment. Moving to specific tools and uses on the computer, the

580 first category -- we'll just talk a little bit about writing. You mentioned that

581 you do different kinds of writing with the computer. So what kinds of writing

582 do you do?

583        A. Well, basic -- basically, now I just write letters, notes, e-mail -- this type

584 of thing -- at this point.

585        #26. Q. And so when you do letters and e-mail and things like that, do

586 you just do it straight on the computer, or does that happen at some other

587 stage? I'm asking--

588        A. No. I do it directly on the computer. I go -- you know, I've

589 (unintelligible), and then I just type it on the computer. And I read it back

590 paragraph for paragraph, and if it doesn't sound right, I change it right there,

591 and just take it from there.

592        Q. And do you do that with e-mail or just with letters?

593        A. With e-mail.

594        Q. So you--

595        A. Well, my letters pretty much have become e-mail or mostly e-mail. I

596 write very few letters other than -- well, the holidays I write some letters.

597        #31. Q. Here we are. So writing on the computer -- primarily e-mail. I

598 think we'll move on specifically to e-mail. Just kind of the general

599 thing -- what has your experience with e-mail been like?

600        A. I think my experience with e-mail has been pretty satisfying. Again,

601 the most frustrating thing was to go and check your e-mail and have the

602 computer say the line's busy or there is no answer, and you have to do that

603 three or four times before you can get through and find out whether you have

604 any or not. Another thing that's a little frustrating is sometimes people will

605 send a message at a specific time, and you don't get it for hours or maybe even

606 till the next day, it seems like. And I don't know what causes that. But that

607 sometimes is frustrating if you're communicating back and forth on a regular

608 basis. But, overall, I think it's been pretty good. I just enjoy the fact that it's

609 so easy to communicate so quickly at no extra cost.

610        Q. Yeah. Hopefully, it will stay that way for a while longer.

611        A. Yeah.

612        #32. Q. Good. So do you think e-mail distances people from one

613 another in some ways?

614        A. Definitely not. I think it brings them closer together, in my use of it.

615        Q. Yeah. And that's what we're after -- your use of it.

616        A. Maybe that's because you can communicate so much more often with

617 no extra expense. It doesn't mean that I still don't want to call and talk to the

618 person on occasion and hear their voice and, you know, actually have a

619 conversation -- a live conversation with them. But I really think it brings them

620 closer because you can communicate so much more often.

621        #33. Q.    So -- yeah -- frequency can make a difference. And this is

622   getting more specific on the same subject. Does e-mail help people

623   communicate?

624        A. I think it does. I think it does because -- at least it has for me, because

625   I communicate with friends through e-mail that I really don't have time to call.

626   And that may sound like a funny thing to say. But if I call them, the

627   conversation is an hour long, and if -- but by -- if I e-mail them, I can probably

628   do it in -- depends on how much I need to say, but probably at the most

629   ten -- ten or 15 minutes.

630        Q. So sometimes it can help you save time?

631        A. Help -- yeah, helps me save time. What else were we looking for?

632   What was the question?

633        Q. Does it help people communicate?

634        A. Oh, yeah. Yeah. Yeah. And like I said in a previous question, I think

635   it brings people closer together because they can communicate more often,

636   because you can drop -- you know, drop somebody a quick e-mail or send

637   them a joke with a short note on it or something like that. Like I say, you call

638   them on the phone, and it takes too much time. And then you don't always

639   catch them at home on the phone, and--

640        Q. Yeah. People's schedules--

641        A. Yeah.

642        Q. Are different. And you alluded to cost earlier.

643        A. Yes.

644        #35. Q.    So there's long distance phone bills you don't have to worry

645   about. Okay. And this is -- you may have already answered this. But I'll just

646   say does e-mail have the potential to hurt communication in any way? Does it

647   hurt communication?

648        A. Well, it certainly hasn't for me. I don't know that -- it might have the

649   potential for other people, in that maybe they just e-mail and never talk to the

650   person. I do -- I combine both. If they don't combine, like, calling them on

651   the phone or meeting them for lunch or something like that, then maybe it

652   might be hurtful in a relationship with a friend or a relative or something.

653        Q. So yeah. So if you let it take the place of--

654        A. If you let -- right.

655        Q. Other forms of communication--

656        A. Right. But as--

657        Q. Is hobbled, but, otherwise--

658        A. It's an adjunct to communication. It's wonderful, as far as I'm

659   concerned.

660        #36. Q.    Okay. So if you can kind of try and remember, can you

661   describe a particularly successful or unsuccessful e-mail communication

662   experience that you've had?

663        A. A successful or unsuccessful one?

664        Q. Yeah. Kind of your choice, what you'd like to describe.

665    A.  Well, I don't know.  I feel -- you know, I -- you want me to just pick
666    out one specifically and tell about it or--
667    Q.  Yeah.  Like, a specific one that went well or didn't go so well, and kind
668    of tell me what went on, if you can remember.
669    A.  Well, I can't think of any -- pinpoint one specific thing.  But I feel that
670    my communication back and forth with my daughter goes extremely well,
671    because we answer -- seem to answer one another in a timely fashion.  And,
672    you know, that way we -- we're really communicating every day.  I know I'm
673    not answering your question specifically.  But I can't really think of a
674    specific -- one specific thing.
675    #37.  Q.    Well, that's fine.  And I believe you answered this -- well, no.  I
676    guess you didn't answer this one about e-mail.  Do you think men and women
677    use e-mail differently?
678    A.  Well, I can speak for my husband and myself, for sure, in that he
679    doesn't e-mail nearly as often as I do.  I have -- you know, I e-mail much more
680    frequently than he does.  And I would tend to guess that probably is true
681    gender-wise, that maybe -- that women would use e-mail more frequently than
682    men, just because I think women are better communicators, in general.  And
683    so they like this adjunct of communication.
684    Q.  Sort of they're more -- maybe even more interested in communicating?
685    A.  Right.  Right.
686    Q.  So frequency is one difference.  Have you had any opportunity to
687    perceive, you know, when men use e-mail?  Do they use it differently from
688    women?  Or have you not had much experiencing e-mailing with men?
689    A.  I actually haven't had much experience e-mailing with men.  My
690    husband -- the e-mailing that he has done mostly has been when he's working
691    on his family tree.  And he communicates back and forth, and it has to do with
692    information about the family -- the family tree.  So both with men and women.
693    Q.  But mostly it's about information?
694    A.  It's informational-type, yes.  It's an informational-type thing.  And
695    if -- and he's -- if he's either relating information, or he's requesting
696    information.  So it's much more informational, more than just casual
697    conversation-type things.
698    #38.  Q.    Here's another one.  Do women use e-mail differently with
699    other women than they do with men?  Again, I'm not sure how much
700    experience you have with e-mailing men.  But--
701    A.  I haven't e-mailed too many men.  But it would depend on the woman.
702    If you had not -- if I were to e-mail some of my male friends, I don't think I
703    would e-mail them any differently than I do women.  But -- say -- repeat the
704    question one more time.  I'm getting off track here.
705    Q.  Do women use e-mail differently with other women--
706    A.  Oh, than they do with me.
707    Q.  Than they do with men?
708    A.  Probably somewhat.  I mean you might, you know, be more personal,
709    talk about more personal things with other women than you would with men,

710 although if the man was a good enough friend, you might tell -- you know, you
711 might tell him feelings and things, the same as you would a woman. But it just
712 depends on who the man -- who the man or woman is, I guess, in my mind.
713     Q. So not -- you can't just totally categorize it?
714     A. No, I can't.
715     #39. Q. So moving on, then, to the Internet, what do you think of the
716 Internet -- just general impression?
717     A. I think it's wonderful. There's so much information out there that you
718 can have access to, that it's just fantastic. Now, knowing how to get there can
719 be another problem. But I'm beginning to get the idea because my husband is
720 pretty good at getting pretty much what he wants on the Internet now. He's
721 figured it out. He's teaching me.
722     Q. So what -- can you tell me just a little bit of what you've figured out or
723 what he's figured out and showed you? What helps you navigate?
724     A. Well, the first -- in the first place, knowing where to put the
725 address -- you know, the address in so that you can get into the Internet. Of
726 course, you see, our computer is very user friendly, because all you have to do
727 is push a button, and it automatically goes to the Internet. And then you just
728 have to type in an address, and then you're there, you know. But it took me a
729 while even to figure -- even figure that much out. But--
730     Q. Not necessarily intuitive. Okay. So -- but I guess I'm thinking of this
731 wealth of information that's out there.
732     A. Um-hum.
733     Q. But then getting there is another problem. When you said "getting
734 there," were you just thinking about getting on the Internet at all, or--
735     A. Getting on the Inter--
736     Q. Finding stuff once you--
737     A. To a specific address, like, whether it be a health setup or what -- you
738 know, whatever your -- whatever you happen to be looking for -- used cars or
739 whatever, you know.
740     Q. And then so it sounds like your husband has figured out ways to kind
741 of get around--
742     A. Yeah. Get around on the Internet, yeah, once -- you know, once
743 you're on it.
744     Q. Okay.
745     A. But mainly I think it is knowing the right address to type in, and if you
746 know the right address, why, the right address will just, you know, pretty much
747 take you there.
748     Q. Yeah. To, like, a specific--
749     A. To a specific--
750     Q. Site?
751     A. Site. And then the site usually has a menu or brings up things
752 that -- you know, where you can get further into it. It all -- to me, it all just
753 takes time and investigating to figure -- you know, but it's user friendly enough
754 that you can figure it out if you want to take the time.

755   Q. That's probably the key -- is time.

756   A. Time, yes. Right. Because when one is retired one's much more busy
757 then when they were working.

758   #40a. Q. Okay. All right. So getting more specific on the Internet,
759 you've said that you use the Internet. How, primarily do you use it?

760   A. Actually, the most times that I've used it has been to look up specific
761 health questions or answers -- or answers to health questions. Like, looking up
762 a certain -- maybe a certain drug like Nerontin, and trying to -- you know, so it
763 gives you all the background of it, and, you know, all its cause and effects and
764 all this type of thing.

765   Q. Ever use chat rooms?

766   A. No, I haven't used a chat room, and I really wouldn't know how to go
767 about using one, I guess, probably.

768   Q. Then that's--

769   A. That's something my husband hasn't gotten around to, either.

770   Q. Okay. But you've--

771   A. I've heard of them, yeah. I've heard of them, yeah. And that's about
772 all.

773   Q. So it sounds like you use it for research. Do you use it for -- have you
774 shopped on the Internet at all?

775   A. No. Actually, I really don't want to get started on that. So I have
776 just -- I just haven't even looked because I think it could be pretty tempting.

777   Q. Right.

778   A. And sometimes you end up buying things you don't really need just
779 because it looked like a good deal or they looked interesting.

780   Q. Kind of like going to Costco?

781   A. Yeah. Or shopping over TV, you know. I don't do that, either.

782   Q. And then news or anything like that off the Internet?

783   A. I haven't, no. I haven't really looked at news on the Internet. And I
784 don't know that my husband has, either. We usually just, you know, get our
785 news off the TV. We listen to the news in the morning and then at noon and
786 then at night on TV and haven't -- haven't gone to the Internet for that.

787   Q. Yeah. Probably take the paper?

788   A. Yeah. We take a paper and read the paper.

789   Q. Well, getting back, it looks like primarily you use it for research and--

790   A. Right.

791   #40b. Q. So what has that been like for you?

792   A. It's been beneficial. You know, I -- any kind of question that
793 I -- excuse me -- wanted answered, has always -- the answer's always been
794 there. And I think with my husband, he's found all kinds of information
795 on -- oh, like boat motors, like I mentioned before. He's interested in -- sort
796 of in the market for a boat motor. You can get, like, the blue book price of
797 cars. So you know what your car that you're going to trade in is worth and
798 what -- maybe if you find a car, you can go back and check and see what the
799 blue book is for that before you purchase the car -- those type of things.

800    Q. So where would you have gone to get that information before the
801 Internet was available?
802    A. Which? The--
803    Q. Say, blue books, for example--
804    A. Blue books?
805    Q. For prices.
806    A. Sometimes the dealers have blue books. They don't always want to
807 share them with you. But I think you can buy blue books. I think even
808 maybe -- well, any magazine place that has -- you know, it's a big, big store that
809 has a lot of magazines and things like that. I think you can check on it in a
810 library.
811    Q. So that's -- yeah -- kind of what you've done?
812    A. Yeah. That's what we've done.
813    Q. So the Internet makes it more convenient?
814    A. Much more convenient.
815    #42. Q.   And actually I think you've already answered this question. Do
816 you think men and women use the Internet differently? But do you have
817 anything you want to add to that?
818    A. They probably do. I don't know. I think women would tend to
819 maybe -- those that are shoppers or shopaholics, or maybe they don't have to
820 be a shopaholic, but like to shop more than I do. More women would
821 probably buy things, I think, over the Internet than men.
822    Q. Although I suppose if you dislike shopping--
823    A. Yeah.
824    Q. In department stores, then you might like shopping on the Internet
825 more, maybe. Or do you think it's just kind of if you like shopping, you like
826 shopping? If you don't like it, you--
827    A. Yeah.
828    Q. Don't like it?
829    A. But with me, I don't like it, unless I can just go and see -- I have to see
830 something and feel the texture and this type of thing before I'm interested in
831 buying it. I don't think it would interest me over the Internet too much. But
832 like I say, I just haven't -- I haven't gone in, because I think it could be
833 tempting.
834    Q. Better safe than sorry?
835    A. Yeah. I still want to feel, touch, and see the actual product before I
836 would be -- even think about buying it, you know.
837    Q. Yeah.
838    A. So maybe I'm just not there yet on shopping on the Internet.
839    Q. Well, yeah. It's a matter of opinion--
840    A. Yes.
841    Q. Whether that's--progress or not.
842    A. Yeah.
843    #41. Q.   Then a final question. Do you see the Internet as harmful or
844 helpful or some of each and why?

845      A. Well, I would say to me, personally, or to my -- my husband and
846 myself, that it's very helpful. The only way that I see that the Internet is
847 harmful is -- or one of the ways I see that it's harmful is that sometimes young
848 people -- and I'm talking about kids under the age of 18 -- have access to
849 pornography and things that they'd be better off not seeing. And it's on the
850 Internet, and if they're smart enough to know how to get there, why, they can
851 do it. So those types of things, I think, are harmful. And actually, thinking of
852 shopaholics, having all these things available over the Internet. And if you
853 are -- and trying to buy things, you could get yourself financially in trouble.
854 That's the only way I think it could be poss -- the things that come to the
855 top -- off the top of my head, anyway, that's -- those are the things that
856 I -- really, I think could be harmful, or might be -- especially the pornography
857 with kids.
858      Final Q. Okay. Is there anything at all about computers or anything
859 you've talked about that you'd like to add? Anything you haven't gotten a
860 chance to talk about that you'd like to say?
861      A. I can't think of anything. I'll just -- you know, wind up by saying that I
862 think computers are great and a great addition to people's lives and that I think
863 every home should have one. Students starting kindergarten, and every year
864 work on computers. So, you know, it's a part of life nowadays. So having one
865 in your home would help your student all the way through. I mean not just
866 when they get in high school or college, but it can help them from
867 kindergarten on through. And I think pretty soon you'll find there -- there is
868 going to be a computer in everybody's home. In fact, I think we're halfway
869 there, probably, or more.
870      Q. Okay. Thank you.
871      A. You're welcome.

# Appendix C: Cynthia

1    Q. Okay. The first series of questions are going to be about yourself and
2  your relationship to technology -- just kind of some general questions. What
3  images does the term "technology" bring to mind for you?
4    A. Images? Like, what do I think it is? I think of electronics -- anything
5  from a stereo system to computers. That's -- that's what comes to mind.
6    Q. Okay. Are there any -- is there something that you just instantly
7  picture? Is that what you picture -- just stereo and electronics -- all sorts of
8  things like that?
9    A. I -- well, computer -- computer.
10   Q. Okay. And do you consider yourself mechanically or technologically
11 inclined?
12   A. No, neither.
13   Q. And why not?
14   A. I didn't grow up that way. I'm 42 years old, and I grew up when girls
15 pretty much didn't do those things. You know, it was still the dark ages. My
16 father wouldn't teach me even to change the oil in my car because he didn't
17 want his little girl to do that. So I didn't have the opportunity to even be
18 mechanical. Technology, again, was not a field that girls or young women
19 went into when I got out of school. They were still being teachers and nurses.
20 They were just starting to get into the technology phase.
21   Q. Okay. And you partially answered this. But I'm going to ask this
22 question, anyway. Who and what has influenced your beliefs about
23 this -- about being -- not being mechanically or technologically inclined?
24   A. Well, definitely just my environment I grew up in, is the biggest thing.
25 And my father, of course. But everything around me was that way. Even the
26 courses that we were allowed to take in school -- girls couldn't take shop when
27 I was in school until, I think, my last year or senior year in high school. We
28 had to take home-ec. So my environment just completely shaped that.
29   Q. Okay. Great. And it wasn't by choice?
30   A. Right. You -- well, as a child you just sort of take what's given. Well, I
31 even tried to buck the system. I wanted to take auto mechanics.
32   Q. Oh, okay.
33   A. They wouldn't let me.
34   Q. So maybe you just didn't even have a chance to find out whether you
35 were or weren't--
36   A. Exactly.
37   Q. Mechanically inclined?
38   A. So I believe, and I still do, that I'm not. But I think I probably am.
39 You know, you--
40   Q. Yeah.
41   A. If you take any skill and do it, you're going to have some aptitude.
42   Q. Right. And if you happen to enjoy it -- you know--

43        A. Exactly.
44        Q. Okay. Good. That's interesting. All right. Now, getting back to
45    terminology, we talked about technology in general. But what about
46    computer? What does the term "computer" mean to you, or what images does
47    it evoke?
48        A. Now what it invokes is much different than it even did a year ago,
49    because I've learned so much in the past year. But it would've -- you know,
50    it's just a big fearful box, something to be afraid of.
51        Q. Was that before or--
52        A. Before, yeah. And now that fearful box has shrunk a little bit,
53    because--
54        Q. (unintelligible) fearful box?
55        A. Yeah. We're still a little fearful.
56        Q. A little bit?
57        A. Uh-huh. But that's because I feel like I'm so far behind everybody
58    else. And I know I'm not behind everyone. But it was--
59        Q. It feels that way?
60        A. Yeah. Um-hum.
61    **Q5.      Okay. Good. Now, moving on to computer use, your**
62    **early uses -- what was your first experience with a computer like?**
63        A. Oh, God. I had -- honest to God truth -- I had to call the computer
64    teacher to ask her how to turn it on. I didn't know how to turn the damned
65    thing on. We were given computers at school. Just for some reason there was
66    money, and it was deemed that every teacher would have a computer in the
67    classroom. So it showed up and was put on my desk. No one was there to
68    hook it up. I didn't -- you know, I didn't know the first thing.
69        Q. And so here you've been given this wonderful thing because of extra
70    funding. It sounds like no training -- just--
71        A. No.
72        Q. Put the box on your desk and--
73        A. Um-hum.
74        Q. Here it is?
75        A. Yeah. We were promised training. And we finally did get some down
76    the road. But then it was way too advanced. They were showing us how to do
77    things that were way--and I needed to know how to use a mouse and how to
78    save something. I--God, the first time I did something on the computer was
79    in Claris Works. I didn't know about saving. So I turned the damned thing
80    off and lost everything I did.
81        Q. It's amazing what people assume can be intuitive, you know.
82        A. Yeah. Yeah.
83    **Q6.      Okay. So my next question relates to that. When and**
84    **how did you first really learn to use a computer?**
85        A. Well, when -- it was shortly -- no, it wasn't shortly. It was almost a
86    year after I got that computer that I started spending some time in talking with
87    people. I still hadn't had any formal training. I just started talking to other

88    teachers about what do you use it for? I had no idea what you use it for, really,
89    other than some simple word processing. I could write a letter and print it out,
90    and that's as far as I ever got for a long, long time. And then by talking to
91    those people, you know, they'd said, "Well, I do my grades on the computer."
92    And I was, like, what? Because I had 200 and -- at that point 280 students.
93    And to be able to do grades on computer would have saved me hours of doing
94    it by hand. So that's how I started, just by talking to other people and finding
95    out what you could do on it.
96        Q. All right. And so what questions and concerns did you have at that
97    time when you were first learning?
98        A. Well, concerns were always that I would lose my information. I still
99    wasn't sure about saving to a hard drive versus a floppy. I didn't -- you know,
100   I didn't even understand the terminology. So I could talk with someone.
101   They'd say, "Oh, yeah, I've got this stuff on my floppy. Do you want to
102   borrow it?" And I was what? A floppy? (unintelligible) So I -- well, I had
103   questions, but there were so many questions I didn't have because I didn't
104   even know they were possible to ask.
105       Q. Okay. Yeah. And you had a sense that there was more you maybe
106   should be asking?
107       A. Yeah.
108       Q. But who knows what, because--
109       A. Exactly. And I didn't want to look stupid. I'm not a stupid person,
110   and that really intimidated me. I mean big time.
111       Q. Yeah. I can certainly relate to that.
112       A. There were kids at that point -- because we had computer labs. And
113   the kids were so far ahead of me that that was intimidating. Finally, I got over
114   that enough to ask kids to help me, and, of course, they loved it.
115       Q. So what grade level and what subject matter was this?
116       A. I was teaching band, and it was 6th, 7th, and 8th.
117       Q. Okay. Junior high?
118       A. Yeah.
119       Q. So -- well, maybe we'll get into that later. I'm curious how you might
120   have used that within your class. But we'll hold off on that for now. Okay.
121   So the next question is -- you hinted at this. But who and what helped you
122   eventually find out what you needed to know? You mentioned kids and
123   talking to other people. But if there's anything else you want to--
124       A. It was really mostly self-exploration. I started to get some books and
125   read about it and -- and to find out what I could do and how to do it. I -- that
126   was also pretty much (unintelligible) -- I finally decided I'm going to have to
127   know how to do this to do my job, because more and more we had to do
128   things on computer. For instance, the principal said, "You know, your next
129   evaluation is going to be computerized." And we had to -- there were
130   documents we had to produce to give to her, and you had to do it on
131   computer. So -- and more and more those things kept happening. And I

132    finally said, "Shit. I've gotta -- I've gotta join the technological world and get
133    with it."
134        Q. There was nowhere to run -- nowhere to hide?
135        A. Yeah. And I thought I could. You know, when computers first came
136    out, I can actually remember that -- I thought I'm never going to use this.
137    This is for brains. This is for people who do rocket scientist stuff. This is for
138    engineers who build things. I'm not going to need this. And so I didn't. I just
139    totally for years ignored them, while other people were learning. And so I've
140    been behind since the get-go.
141        Q. Okay. And, again, you sort of covered this. But I'll ask this. Who and
142    what hurt your ability to find out what you needed to know? What stood in
143    your way?
144        A. Well, me, first of all. I was in denial about computers. And then I
145    guess also what hurt me is that it was just assumed that everyone knew about
146    computers. We didn't get training for so long, and then when we did it wasn't
147    geared to someone who was just starting to learn to use a computer. It was
148    way over our heads, and there were other people in the same boat. So I can
149    say, you know -- and we just -- we were frustrated as hell. And, you know,
150    almost like why am I even trying? I'm so far behind, I'll never catch up.
151        Q. So it just exacerbated that whole feeling--
152        A. Yeah.
153        Q. Of being behind?
154        A. Yeah.
155        Q. That must have been tough.
156        A. Well, it was tough, but, you know, for someone who wants to do
157    everything and do everything really well, which would be (unintelligible), it was
158    also -- it just -- I don't know. It just made me -- it made me feel bad about
159    myself. It made me feel stupid, which I'm not. And the whole thing was
160    just -- it was like a vicious circle. I tried to learn. I tried to what I was
161    supposed to do. But I didn't have the tools, and I didn't have the help. Now,
162    you know, I guess I could have taken classes. But I didn't feel I -- that was my
163    responsibility.
164        Q. Well -- and it sounds like based on the kinds of classes you were given,
165    that you perhaps would have doubted whether other classes would be--
166        A. I would've been scared to death to take one. You know, it was I'll be
167    the idiot in the class.
168        Q. So kind of going back, then, what helped you break this vicious cycle,
169    because, obviously, you did get out of it. Just determination?
170        A. Just determination, the realization I was going to have to. I had to
171    learn to use the computer.
172        Q. Okay. Stop this for just a second. So continuing on, you've talking
173    about what got in your way. You talked about what helped you. Can
174    you -- what else would have helped you to find out what you needed to know?
175    What else would have been good?

176    A.  Well, what would have been -- what they should have done -- "they"
177  meaning the school district -- is offered, from the ground zero, classes in
178  training so that you could go to and feel comfortable and learn.
179    Q.  Yeah.  Like, start with how to turn it on--
180    A.  Exactly.
181    Q.  And go from there?
182    A.  And in a logical procession of classes or seminars or whatever they
183  would want to call them.  And especially it would have been nice if that
184  training would have included, as a teacher, this is how best you can use your
185  computer.  You can go grades.
186    Q.  So kind of focused on the particular audience of teachers?
187    A.  Sure.
188    Q.  Sure.  Okay.  And finally to the early use questions -- or it can be more
189  recent, too, if you like.  But what has been your best or your worst experience
190  with a computer?  You can choose which one you'd like to share, or you can
191  share both if you want.  So your best or your worst experience?
192    A.  Well, do you want this early or recent?
193    Q.  Well, let's -- I'm going to let you make that choice?
194    A.  Okay.  All right.  I guess, you know, early on the -- probably the best
195  thing I ever did on the computer was I learned how to do my concert
196  programs.  You know, set up columns so I could list names -- you know, do
197  something as simple as put the title of a piece and then how to do the dots
198  over to the composer and get it all to line up.  That was a big -- big deal.
199    Q.  Okay.  So you could kind of do your programs.
200    A.  Yeah.  It saved me a lot of money, too, because I didn't have to send
201  that out to a printer.
202    Q.  So you did that for your students, or you're talking about concerts?
203    A.  For concerts that my students performed in.
204    Q.  Student performances?
205    A.  Yeah.
206    Q.  Okay.  All right.  And what about -- what's one of your worst
207  experiences?
208    A.  I still remember that first time I actually typed in stuff and didn't know
209  to save it.  I thought it was just there.  I thought it was saved, and I lost it all.
210    Q.  What was it, again, that you were working on?  Do you remember?
211    A.  That was -- I think it was either a letter to my students or a letter to
212  their parents.  I know it had some dates for things in it of coming events.
213    Q.  So it didn't feel like such an efficient tool at that point?
214    A.  Not at all.
215    Q.  Yeah.
216    A.  No.
217    Q.  I think we all have some horror stories.
218    A.  I was ready to go right back to the typewriter.
219    Q.  Okay.  So moving on to the next group of questions about current use
220  of and relationship with computers, have your thoughts and feelings about

221 computers changed from early experiences to present? And, if so, how, and
222 kind of who and what is influences changed? So we can -- first, you need to
223 kind of talk about how things have changed, if they have.
224     A. Well, things have changed immensely. I mean complete turnaround. I
225 love my computer. It came from, you know, the initial me deciding that I've
226 gotta learn how to do this. And then I started spending more time with
227 Cynthia, who is an engineer, and they're good at computers. And she helped
228 me with things so that when I got frust -- I bought a computer for home, also.
229     Q. Okay.
230     A. Because I just didn't have time at work to sit and learn. So I would do
231 it at night at home. And I had her to help me when I would get stuck. Or I
232 also felt comfortable, then, calling other people, because I did have several
233 other band director friends who were really proficient at computer, and I could
234 call them and say, "You know, how did you do this," et cetera. So, again, it
235 was pretty much -- it was self-motivation. But the more I started doing it, the
236 better I felt about it. And I don't remember the first time that someone asked
237 me a question and I knew the answer, but I know it felt good. You know?
238     Q. Yeah.
239     A. Finally, I knew something. I wasn't the computer idiot anymore.
240     Q. Another rite of passage?
241     A. Yeah. Yeah. And that felt good. And it would in anything, you know.
242     Q. Sure.
243     A. A little knowledge feels good. So it's changed completely. I use the
244 computer for lots and lots and lots of different things now, not just word
245 processing.
246     Q. Well, examples?
247     A. I did a power point presentation for an engineering workshop. I use
248 Excel.
249     Q. How do you use Excel? Did you ever use that for grading or anything
250 like that?
251     A. I didn't. We had a grading program that was specifically that. I've
252 done some budgeting with Excel.
253     Q. And you've got your word processing?
254     A. Yeah. And I do a lot of that. I also have written the technical
255 document for the stores that -- an employee manual. And that involved, you
256 know, more than just basic word processing. Then I wrote that paper for my
257 technical writing class. I had to import documents, and it involved some
258 linking of files. So it went way beyond just the basics. And I was only able to
259 do that because, you know, I've taken the time to learn those things. It was
260 neat.
261     Q. Great. Okay.
262     A. Did I answer that?
263     Q. Yes, you did.
264     A. Okay.

265    Q. I could reiterate a little bit, but I think you pretty much answered how
266    as in, you know, you just -- you spent the time doing it and overcoming the
267    fear of asking questions. It sounds like the more you got into it--
268    A. Yeah. Well, and then, too -- I don't know if this is a part of that
269    question. But I've taken classes in--
270    Q. Yeah.
271    A. You know, I finally decided I had taught myself about as much as I
272    could without getting some formal instruction.
273    Q. So you got yourself feeling competent and comfortable in that, and
274    then you were able to -- you chose to take that extra step?
275    A. Yeah, exactly.
276    Q. Self-motivated. All right. Another part of that question -- I'll just
277    reiterate. You partially answered this. But who or what has influenced this
278    change?
279    A. Me, my peers, and just that need. And I know right now that what I
280    know is not enough. I need to learn more, because more and more of our
281    daily lives is done by computer. And any job -- I mean even a secretary -- you
282    know, a secretary used to have to be able to type and file. I look at jobs now,
283    because I'm looking for jobs, and I even read the clerical ones. They've got to
284    have word processing skills, and most of them have to have either power point
285    or even web design, just for a secretary.
286    Q. Yeah.
287    A. God.
288    Q. It's amazing.
289    A. Yeah.
290    Q. Okay. So keeping in mind current use, how and where do you use the
291    computer, and what primarily do you use it for? So, you know, do you use it
292    at work, home, or do you work at home? How and where do you use it?
293    What primarily do you use it for?
294    A. Well, I'm unemployed, but I have done consulting work. And I've
295    done that at home. And that's been pretty much the word processing end of
296    it. But then I also did the power point, a and I do all that at home. However,
297    I'm limited at home because I don't have the graphics. I don't have enough
298    power to do all the graphics that I'd like to do.
299    Q. The computer doesn't have enough power?
300    A. Right.
301    Q. Or not--
302    A. Yeah.
303    Q. Enough software?
304    A. Yeah.
305    Q. Or both?
306    A. Both. I don't have the right software. I also need more memory. For
307    instance, a friend of mine in Texas asked me a couple days ago to do a
308    brochure for her new business, and it's going to involve a lot of pictures. And

309   my computer doesn't have memory to produce that. I can put in all the
310   information, but when it comes to printing it out it won't do it.
311      Q. Okay. So you know how to do what you need to do, but you need
312   equipment to--
313      A. Right.
314      Q. Set that up?
315      A. Yeah. In applying for jobs now, like I said, you know, just even with a
316   secretary I'm finding out that no matter what the job, it's going to involve a
317   computer. And I really can't think of very many things that wouldn't. And I
318   know that every -- personally, every job I've applied for, I've got to have
319   computer skills.
320      Q. Okay. So primarily you use it for, it sounds like, consulting.
321      A. Yeah. And then I use it a lot for e-mail.
322      Q. Ah, yes. E-mail.
323      A. Yes. Yeah. I keep in touch with people back home, ex-students. I
324   also -- I get out on the net -- surf once in a while and get information. I stay
325   away from, you know, chat rooms and that sort of crap. But it's good for
326   finding information, and that has helped me in my job search a lot.
327      Q. So you're finding quite a bit of what -- prospective employers there or
328   just--
329      A. Um-hum. Yeah. Prospective employers, descriptions of jobs. I also
330   use it just for personal things, for finding recipes.
331      Q. Sure.
332      A. And I've just started about a week ago finding -- going out to some of
333   those shopping sites.
334      Q. Yes. There's a lot out there.
335      A. Oh, my God.
336      Q. Enough to almost be dangerous.
337      A. Yeah. Oh, yeah. It's easy to click and buy.
338      Q. Yeah. Okay. So--
339      A. Oh -- and I also use it for fun. I like to play hearts and solitaire.
340      Q. Games?
341      A. Yeah.
342      Q. Okay. So you've got a computer at home. Where do you keep it in
343   your home?
344      A. I have an office, and I have a computer desk that's all set up and
345   supposedly ergonomically correct, because I do spend a lot of time at the
346   computer. And that's the focal point of my office.
347      Q. And you mentioned you and Cynthia live together.
348      A. Um-hum.
349      Q. Correct? Does she have her own computer or do--
350      A. No, she doesn't. She uses mine. But she doesn't do that much on it,
351   because she's on a computer all day at work. She really doesn't want to come
352   home and do more.

353    Q. Yeah. Well, I can understand that. All right. Okay. Here's sort of a
354 funny one. But does your computer have a name?
355    A. No. Sometimes "goddammit."
356    Q. So maybe at spontaneous moments it may--
357    A. Oh, yeah.
358    Q. Have a name? But--
359    A. Oh, yeah.
360    Q. But no unchanging name?
361    A. No.
362    Q. And -- all right. Do you -- you sort of answered this a little bit. But do
363 you talk to the computer ever?
364    A. Yeah. I guess I have. But it's not -- not in a nice sort of -- it's usually,
365 you know--
366    Q. Well, that was the next part of the question. Describe how you talk to
367 it -- you know, the kinds of things you say and how you say it.
368    A. It gets called a son of a bitch, you know, pretty frequently.
369    Q. Okay. Well, that (unintelligible) out -- do you think of yours as he, she,
370 or it? And why?
371    A. Definitely not she -- not a she. I guess just it. And--
372    Q. Well, we can come back to that one.
373    A. Okay.
374    Q. So, anyway, when you talk to it you sometimes call it nasty names?
375    A. Um-hum.
376    Q. Are there any other ways you talk to it or times?
377    A. No.
378    Q. Is it mostly out of frustration, or do you ever say positive things like,
379 "Good job," or anything like that?
380    A. Once in a -- I guess, you know, once in a while I might say, you know,
381 "Cool," because it'll do something I didn't know it could do or would do.
382 And it's neat to see, you know. I don't know that I'm really talking to it, but
383 it's cool that it could do that.
384    Q. So--
385    A. I don't have a personal conversation with my computer.
386    Q. No personal?
387    A. No. No.
388    Q. More of it's nice that this happened, that you're not, like, thanking it or
389 attributing it--
390    A. No.
391    Q. To the computer in quite that way?
392    A. That -- that would be correct.
393    Q. Okay. All right. On the lighter side, do you have a favorite joke about
394 computers or computer users? Or have you heard or seen anything?
395 Sometimes things go around in e-mail.
396    A. You know, I never can remember a joke. I don't know. I guess not. I
397 do have something on my computer that's kind of cute and I like. It's a yield

398  sign, and there's a person sitting inside of it banging their head on their
399  computer. So, you know, one of those frustrating days it's kind of fun to look
400  at that.
401      Q. That works.
402      A. Yeah.
403      Q. Okay. Great. And coming full circle and wrapping up the current use
404  and relationship, at least for the moment, how would you feel if you no longer
405  had access to a computer, thinking in terms of what would you miss the most?
406  But how would you feel if you no longer had access to a computer?
407      A. Oh, God. Yeah. I actually thought about this, because I spend so
408  much time every day on the computer. I'd be lost. I -- I'd be devastated.
409  That computer has so much information stored in it that's important to me,
410  and it does so much for me. You know, we do -- I do all of our finances
411  around there. I wouldn't want to do all of it by hand again. And all the typing
412  that I do and the correspondence. I'd be lost. You know, the e-mails that I
413  get every day and send every day are just really important to me.
414      Q. Yeah. I -- so--
415      A. I'd be devastated.
416      Q. Slightly different than how you might have felt a few years ago?
417      A. Yeah. I would've given it away to the first person that came along that
418  would carry it off, you know.
419      Q. Okay. And just a followup to that, what would you miss least, or what
420  would you -- is there anything you wouldn't miss if you didn't have it?
421      A. I don't think so. Yeah. It's -- once in a while it's frustrating. But, still,
422  the good so outweighs the bad. I love my computer. And I've gotten kind of
423  protective about it.
424      Q. Yeah?
425      A. I will say that. You know, I haven't personified it. But, like, if
426  somebody comes over and wants to use the computer, "Now, don't touch my
427  settings. You know, don't do anything." Because I have a friend who will do
428  that. She's a computer guru. You know, she'll come in and rearrange things.
429  Uh-uh. Leave it alone. That's my baby.
430      Q. Yeah. I can recall work memories where technical support folks
431  would -- they'd be trying to help you, and you'd leave them alone for half an
432  hour, and nothing works the same.
433      A. Yeah.
434      Q. And you spend an hour or two trying to get it back--
435      A. Yeah.
436      Q. How it was.
437      A. Oh, this was--
438      Q. (unintelligible)
439      A. Yeah. Bullshit. I like the icon where it was. Put it back.
440      Q. Good. Okay. All right. So getting back, we kind of alluded to this
441  earlier. But computers' gender or personality type -- whatever fits

442    more -- that's kind of a category.  First off, do you think men and women use
443    computers differently at all?
444        A.  Oh, yeah.  Yeah.  I don't think too many men put their recipes on
445    computer.  You know, I'm sure there are some.  But I think there are a lot of
446    correspondence and just word processing is done more -- women tend to do
447    more of that.  And that goes back to -- you know, there are still way more men
448    in technological fields than there are women.  So I still think that men use it
449    more on -- for business and a technology-based business purpose than women
450    do.
451        Q.  So women -- more personal uses?
452        A.  More person uses--
453        Q.  In addition to--
454        A.  Yeah.  And more of the -- just the word processing.  Or -- and
455    I -- God, this sounds sexist.  But I'm a woman.  So I can say this.  I think that
456    a lot of women, too, use it for -- in designing Christmas cards or birthday
457    cards and more of the fluff sort of things.
458        Q.  Okay.  Or for personal or -- okay.
459        A.  Yeah.
460        Q.  Or -- well, depending on how -- your possibly creative stuff?
461        A.  Definitely creative, yes.
462        Q.  Okay.  Let's see.  Is there anything else you want to add to how you
463    think men and women use computers different ways, or does that pretty well
464    cover it?
465        A.  You know, it was kind of a sexist statement.  But as more women get
466    into -- and they are now getting into engineering or, you know,
467    architecture -- even accounting.  They're going to use it for more things than,
468    you know, what I said earlier.  It's just we -- we're victims of the way society,
469    you know, treated us.  I'm talking about people my age, not people who are
470    younger so much, because things have changed.  But I can think of friends of
471    mine, and not just talking about me -- but friends of mine who have come, you
472    know, through the same thing as me, and they're using it now for more
473    technical-based things.  So it's changing.
474        Q.  It takes time?
475        A.  Yeah.  Yeah.
476        Q.  Okay.  Great.  Here's one for you.  Does one sex or gender enjoy
477    computers more than others?
478        A.  This is just my thought on that.
479        Q.  That's all I want, is what you think.
480        A.  Okay.  I think probably women do because of what I just said.  They
481    can do more enjoyable things other than just go to work and use it.  You
482    know, I'm thinking about the guys that work where Cynthia works.  I would
483    really bet a lot of money that most of them don't go home and, you know,
484    print out a birthday announcement for their child or, you know, do the
485    Christmas cards.  The do work on computers all day long, and it's hard

486     technical work. They don't have the time or the inclination, probably, to go
487     home and play on one.
488         Q. What about computer (unintelligible)?
489         A. Ooh. That's a tossup, I'd have to say. That's probably pretty equal.
490         Q. Yeah. And that was -- I was wondering, you know. You were
491     pointing to women doing recreational, kind of fun things.
492         A. Yeah.
493         Q. And then do you include games?
494         A. No.
495         Q. Is that like a separate category?
496         A. Games are separate.
497         Q. Okay.
498         A. That's a good point.
499         Q. So -- yeah. And then we may or may not get into this. But there's a
500     whole category of types of games and what--
501         A. Um-hum.
502         Q. What people like to play. Okay. So I've already asked you about if you
503     think of the computer as he, she, or it, and you want to stand by that or add
504     anything to that?
505         A. It's an it. It's just--
506         Q. An it?
507         A. A machine. And the only way it's personalized is that I own it, you
508     know. It's mine. I set it up. It's the way I want it. But it's still just an it.
509         Q. Okay. So it's not like it wouldn't even be comparable to maybe like
510     having a pet or something that you take care of or--
511         A. No.
512         Q. No. Just a machine?
513         A. Yeah.
514         Q. It's yours, but--
515         A. Yeah. It's -- you know, it's kind of like if you were to ask me about my
516     house. Is it -- you know, is it a he, she, it? It's a house. But it's my house, and
517     the furniture is where I want it, and it's efficient because I have put things
518     where I want, how I want. It's the same thing. Computer's the same way.
519         Q. Okay. That's good. I've arranged things how I want, and--
520         A. Yeah.
521         Q. Okay. What about -- this one kind can be kind of hard to extract. So
522     if you want me to explain it more, let me know. But I'm thinking about
523     computers and software programs and the way they're designed. Do you think
524     they're more user-friendly or more easily accessible to people who think in a
525     certain way? I'm thinking -- it could be anything like linear versus non-linear,
526     masculine versus feminine, creative versus more practical. Is there a certain
527     kind of mind-set that they're designed to be easier for?
528         A. You know, yeah. I can answer it, because just recently I've kind of
529     thought about that. I had to go and take these tests, and one of the -- well,
530     there are two problems with this. The test used a different version. For

531  instance, I have Windows '90 -- I don't know -- '97. And this used the newest.
532  And the power point was upgraded. So things were a little bit different.
533  Where I was expecting things to be, they weren't always there. So I had to
534  think about where would that be? Would it be a format? Is it a text, you
535  know? And on this test you only got one chance. So you had to really think
536  about where it could be, or you got the question wrong. So, to me, it's
537  pretty -- pretty much analytical. If you're going to change the -- a format of
538  something, then you go to the format pull-down. You don't go to something
539  else. So, yeah, I think it's analytical, and it's set up that way -- categorically.
540      Q. And so are there certain types of thinkers or types of people who
541  would maybe have a harder time with computers?
542      A. Yeah.
543      Q. Because of the way they think and--
544      A. I think--
545      Q. And who -- you know, how would you describe -- what kind of mind-
546  sets would have it -- so you say analytical would probably have an easier time--
547      A. Um-hum.
548      Q. With computers? And who might have a harder time?
549      A. Artsy-fartsy people like me.
550      Q. Okay.
551      A. Yeah. I'm real creative, but I'm not -- what's the word I want? I'm
552  analytical, but in a different way. To tell me that two and two is four, period.
553  That's it. Know it. Understand it. Huh-uh. Now, I'm the kind of -- if you've
554  got two apples and two apples here and showed that to me in a different way,
555  okay. Computers aren't that way. Computers are two plus two is four. This is
556  how you do this function, and there's not a lot of leeway. There's not a lot of
557  room for creativity, you know, in its set functions. Is that making sense?
558      Q. Yeah. It sounds like -- well, for one thing it sounds like the kinds of
559  analytical things you need to do to do well with computers, they'll let you put
560  your hands on anything. It's like it's not visual enough. It's almost too
561  abstract or -- am I close there? Is it--
562      A. I don't -- I don't know. I wouldn't say abstract. It's locked in. You
563  know, this is how this works, and this is how you do it. You know, when I say
564  it's not creative, you can be incredibly creative on a computer. That's not what
565  I'm saying. But how to do specific things is analytical, and I feel like it's pretty
566  boxed in.
567      Q. So kind of -- it has a certain kind of logic to it--
568      A. Yeah.
569      Q. The way it's set up. But maybe you don't feel like that's quite the way
570  your mind works?
571      A. Exactly. Thank you.
572      Q. Different kind of -- just a different kind of logic?
573      A. Yeah.
574      Q. Okay. And you consider that -- do you consider that more of an
575  analytical logic, and yours is a different type? Or what word might you use to

576     characterize the computer's type of logic versus, say, yours? Or do you have
577     any words to describe those?
578         A. Well, analytical, yeah. And then, you know, I guess there's a certain
579     preciseness -- conciseness -- in a computer that, as a creative artsy person,
580     that's difficult for me sometimes to adhere to.
581         Q. Okay. Yeah. That makes sense. A certain precision and a
582     certain -- my way or the highway-type thing?
583         A. Yeah. Yeah. And, you know, I want there to be 47 ways to do a task,
584     you know. If I feel like doing it this way today, I'm going to. And if I feel like
585     doing it a different way tomorrow, I want to be able to do that.
586         Q. Do you ever find sometimes that there is a new way to do--
587         A. Oh, yeah. Especially in Word. And then, you know, the other -- the
588     flip side of this is that that's frustrating as hell. You know, for instance, when
589     I had to take this test, they wanted it one way. Well, I knew -- I got some
590     questions wrong because I didn't do it the way they wanted. And after the
591     test -- you know, I went to the guy, and I said, "I can show you four other
592     ways to do this." And some of them were incredibly simple. Like auto sum in
593     Excel. You know, I went up and tried to just do the auto sum icon. Well, that
594     wasn't the way they wanted it done. So I got it wrong. I said, "I can show you
595     several ways to do auto sum. What do you want?"
596         Q. Yeah. So that sounds almost more like a feature of this test.
597         A. Yeah. Yeah. It was real rigid. It was kind of stupid.
598         Q. That's interesting. So what's the title of this class that you're taking
599     that had these tests? Or was it a class?
600         A. No. It was an employment agency.
601         Q. Oh, an employment agency?
602         A. Yeah.
603         Q. Oh, gotcha. So looking for work, and they're testing you on your
604     computer abilities?
605         A. Yeah.
606         Q. And they're deciding what your ability is based on--
607         A. Absolutely based on that test.
608         Q. Wow. That's--
609         A. If you're going to an employment agency, I don't care who and for
610     what, you better be ready to take this test.
611         Q. Okay. Well, that's certainly a good thing to know.
612         A. Yeah, because if you can't do basic word sort of functions and, really,
613     even the whole office -- Microsoft office -- that's what you're tested on at
614     these places. You know, I don't know what kind of job you're going to get
615     you, other than maybe manufacturing, putting things together on an assembly
616     line.
617         Q. That's -- yeah. That's -- things are changing.
618         A. Yeah.
619         Q. And it sounds like you better know -- better be able to guess the way
620     they want you to do it on the test. Did these people -- were they flexible

621    enough to allow you to show them that you knew certain ways, or did

622    they -- certain other ways?

623       A. No.

624       Q. It was just--

625       A. No.

626       Q. So it was kind of like maybe -- could you go in and retest later?

627       A. Yeah, you could.

628       Q. But you needed to figure out what they were looking for and be able to

629    gear your responses accordingly or--

630       A. Yeah.

631       Q. Or your abilities would not be visible?

632       A. Right. And they -- you know, they did say, well, we take that into

633    account, and we generally up everybody's score by five points, because

634    they -- they, the people there, also had taken this test, and they found it

635    frustrating.

636       Q. Okay. So it sounds like they're still kind of learning how to test people

637    and--

638       A. Well, there aren't a lot of tests out there, according to them. A lot of

639    different formats. So--

640       Q. Well, this may be a fairly new thing, you know.

641       A. Yeah, it probably is.

642       Q. Okay. Interesting. Moving onto specific tools and uses of computers,

643    in the area of writing, do you do any kind of writing on a regular basis?

644       A. Yes.

645       Q. What kind of writing?

646       A. Well, I was doing professional writing. And, you know, as jobs come

647    up I do them. But that's not something I do daily. But I have done

648    professional documents.

649       Q. And by "professional," you mean--

650       A. The--

651       Q. Business?

652       A. Yeah.

653       Q. Technical, maybe, or--

654       A. Well, I did -- you know, I did write for my technical writing class, but

655    that was not very technical. The employee manual that I did -- and then I

656    prepared a workshop on how to write a business letter for some executives at a

657    company.

658       Q. Okay. Great. Any other kinds of writing?

659       A. E-mails every day. And then I do some personal letters on there. But

660    I still like to hand write personal letters.

661       Q. That makes then more personal?

662       A. Personal, yes. Well, you can just -- you can be a little more creative,

663    you know, I think.

664       Q. How so?

665     A. Just on how you draw something or write something. I think that
666 penmanship says a lot about a person. Plus, if I get a typed letter or something
667 done on a computer, I don't feel as special, as if I'd gotten something
668 handwritten.
669     Q. Does the typing sort of maybe give it that form letter feel or--
670     A. Yes. And I -- oh, I really hate getting something that has been
671 forwarded to 37 other people.
672     Q. Yeah. That's, I think, gotta be one of the top pet peeves with e-mail.
673 It's an emerging thing that may even turn into a rule of etiquette, if it isn't
674 already.
675     A. Yeah. Oh, I hate it.
676     Q. Don't just forward this -- yeah. I'm with you there.
677     A. If I get any more of those and you scroll down and a teddy bear
678 appears and it's "give yourself a hug today," I'm going to puke. God. Don't
679 you dare send that to me.
680     Q. Okay. Well, I'll take that under advisement. So looking at this, I think
681 I may have my questions out of order here, because I've gotten down -- do
682 you use the computer when you write? Well, yes, apparently, you do. All
683 righty, then. We'll just move that. How nice. Okay. So at what stage of the
684 writing process do you use the computer? Now, this question may or may not
685 be applicable for you. But what I'm thinking about is, you know, sometimes
686 with essays or even a long letter or document, maybe there's a planning or pre-
687 writing phase.
688     A. Yeah.
689     Q. First draft/final draft?
690     A. I know exactly what you're asking. For the longer documents that I've
691 done where I'm going to have to have an outline, I generally do my outline on
692 paper, not on the computer, because I like to doodle and scribble out ideas as
693 they come to me, you know, in a margin or wherever. And then when it
694 comes to getting it organized, that's when I put it on a computer.
695     Q. So when it comes to getting it organized, can you talk a little bit about
696 what that means to you? What has happened, and, okay, now I'm ready to
697 start typing?
698     A. It kind of depends on what I'm doing. But if it's something where I'm
699 going to have different headings, then that's where it would appear because it's
700 so easy to do that there.
701     Q. So you type in headings?
702     A. Yeah. And name a heading, you know, one, two, three. Then when I
703 go to do a table of contents or an index, it's all right there. I push a button,
704 and it's done.
705     Q. Yeah. So you're all set up?
706     A. Um-hum.
707     Q. So once you feel like -- so okay. So you do the outlining by hand. Is it
708 when you're actually beginning to have words that you want to say, you're sort
709 of filling in the outline? Is that when you start to go to the computer?

710   A. Yeah. And I go to the computer pretty early. If I have just even a
711   rough -- and I mean really rough -- outline -- nothing concrete -- that's when I
712   go to the computer, because it's so easy to shift things around on the
713   computer. You know, if I get my outline done, and I decide that I don't want
714   heading four to be there, I want it now to be further up in the paper, I'll cut
715   and paste or whatever.
716   Q. Yeah.
717   A. I love it for that.
718   Q. Yeah. Cut and paste is a beautiful thing.
719   A. Um-hum.
720   Q. Okay. Great. And so that's your thingy of kind of professional
721   documents there, it sounds like -- you know, headings and so on.
722   A. Yeah.
723   Q. And so with letters -- well, it sounds like you -- personal letters, you
724   tend to do those by hand.
725   A. Yeah. Now, I do write a lot of letters for job interviews, and those I
726   do on computer from the very beginning.
727   Q. Start to finish?
728   A. Yeah.
729   Q. So mostly longer stuff where you kind of map it out first?
730   A. Yeah.
731   Q. So has the computer helped your writing in any way? And I'm
732   thinking in terms of -- it could be -- has it helped your writing process? Do
733   you feel like your final product is better or different? Is it just more
734   convenient? Or maybe it's inconvenient. Does it make it easier? How has
735   it -- let's focus on how it's helped your writing.
736   A. Okay.
737   Q. And then we can talk about if it's--
738   A. Negative -- okay. Yeah. It's definitely helped because of the
739   convenience and just the ability to move things around, where, you know, on a
740   typewriter you had to retype it. I think I probably am more inclined to write
741   long papers now than I would have been without the computer. In fact, I'm
742   sure of that. I'm not--
743   Q. Yeah. It makes a difference when you can change things easily.
744   A. You know, I think back to writing research papers in college. Geez, it
745   took more effort to type it because if you messed up something you had to
746   throw it away and start all over again. And something as simple as a header
747   and footer, you know, that was -- for me, to do that on typewriter and follow
748   all the rules was hell. And now you just push a button on the computer, and
749   there it is formatted, and it's done.
750   Q. Yeah -- convenience. So do you feel like writing goes -- does it maybe
751   go more quickly because of this?
752   A. Oh, yeah. Yeah.
753   Q. Now, is it the writing itself or just the formatting that's--

754  A. Well, it's the formatting. It's not he writing. That still is coming from
755 the same thought process -- from you. Yeah, it's just all the mechanics.
756 They're so much easier.
757  Q. It's mostly mechanics. But you feel like your basic thought process is
758 still pretty much the same when you write. It's just certain -- maybe certain
759 parts of it go more smoothly?
760  A. Yeah. Yeah.
761  Q. And how do computers hurt the writing process? And you can draw
762 on either your own experience or, you know, just in general. Well, first you,
763 and then if you have other comments--
764  A. I think it hurts the writing process in that -- well, we're not using
765 handwriting anymore. Handwriting is probably going to be a thing of the past.
766  Q. So how does it hurt? Yeah. And you said something about--
767  A. Basic handwriting skills are going down, not so much personally
768 because I still do write by hand. But in students it's really evident. In 19 years
769 of teaching I saw that change. I don't think that it's hurt the creative process
770 at all, because, again, that's coming from within a person, and no matter what
771 you use to convey that, it's -- you're still conveying the same information.
772  Q. So it sounds like what you're saying is writing -- at least maybe the
773 content of it -- comes from the same place, kind of regardless of what tool you
774 use?
775  A. Sure.
776  Q. It's just it may affect -- so of the creative process isn't harmed. But
777 handwriting itself--
778  A. Um-hum.
779  Q. For those who maybe really learn to do that first without a computer?
780  A. Right. Yeah.
781  Q. And let's see. And do you like writing on the computer. It sounds--
782  A. Oh, yeah. Lots.
783  Q. And would you go back to not using the computer for writing?
784  A. Never.
785  Q. And here's one that kind of goes back to gender. But do you think
786 men and women use the computers differently when it comes to writing? And
787 kind of how?
788  A. Yeah. Again, it goes back to that same old stereotypical sort of thing.
789 I think women still are left to do most of the personal
790 correspondence -- letters to relatives, et cetera. And, you know, I know that's
791 not true in all cases. But I still think in the majority probably it is so. So, yeah.
792 I think that men probably are -- tend to use it more for business-related
793 writing than personal.
794  Q. Now, moving on to the more specific area of e-mail -- okay. And you
795 can -- I guess you can speak in terms of personal and professional use, if you
796 choose to separate those two when you talk about them. That could be
797 helpful. But I'm going to leave it up to you. So what has your experience with
798 e-mail been like, just generally?

799        A. Mostly, it's used for personal.I have used it in a professional setting,
800   and it's handy. It just makes it -- I -- for instance, I've taught in a two-story
801   building. I didn't have to run upstairs to get a message to someone who -- you
802   know, I would have to interrupt their teaching, anyway. I could just e-mail
803   them, and I knew that they'd get it. So it's just -- it's convenient for work, and
804   it saves time. Also, then, you have proof that you sent an e-mail, should you
805   need to do that, and I have had to in a professional setting.
806        Q. Yeah. Documentation?
807        A. Yeah. It's documentation. That's it. But, you know, like I said, it's
808   pretty much a personal use, and I use it every day. I stay in touch with family,
809   with friends, with ex-students. It's entertainment for me.
810        Q. And do you see e-mail as distancing people from one another in any
811   way?
812        A. Yes, it can. And what I -- something I alluded to earlier is this copying
813   and forwarding. You know, it just -- it makes me angry to get forwarded
814   stupid stuff. Or I have a friend who will say, "Dear All," and write this e-mail
815   and forward it to, oh, 20 or 30 of us. And then say, "Write back. I really want
816   to hear from you." That really makes me angry. If you really want to hear
817   from me, why don't you write to me?
818        Q. Yeah. I'm sure that--
819        A. And you can't do that in a handwritten personal letter. I guess you
820   could. You could go down to Kinko's and make copies and say "send me a
821   letter back." You know, people don't do that. But they do on the computer.
822        Q. Yeah. It sort of begs the question of whether there's something about
823   the way things work on a computer that it's so easy to do certain things that
824   perhaps people behave in a certain way that they might not otherwise?
825        A. I think computers have allowed us, if we choose, to depersonalize.
826   And, you know, it just -- if somebody wants to do -- like I said, copy a letter to
827   Joe Blow and everybody else, that, to me, is depersonalizing, and it -- it
828   ostracizes me from that person. If I'm not important enough to -- you know,
829   to single out, then why bother?
830        Q. Yeah. And so I notice you said the words computers have allowed us,
831   if we choose, to depersonalize.
832        A. Um-hum.
833        Q. So it sounds like maybe what you're suggesting is it makes it really easy
834   to do that. But, hey. It's a choice.
835        A. That's right. You don't have to.
836        Q. Let's remember, just because it's easy, that doesn't mean we have to do
837   it.
838        A. Yeah. But, you know, at some point I think we all do.
839 There's -- there's going to be a time in some -- not necessarily e-mail. But,
840 yeah, because it is so easy. It's right there. I'm busy. I'm going to do it this
841 was this time.
842        Q. And then once you do it--
843        A. It then becomes easier to do it more and more, yeah.

844      Q. Okay. And you alluded to this. But getting more specific, does e-mail
845 bring people closer in some ways?
846      A. Oh, yeah. Lots. And we were talking about this on the way down. I
847 will say things in an e-mail, you know, just being silly, that I wouldn't say to
848 your face -- to, you know, that person's face -- because I'm not there. You're
849 not seeing me. It's easy to say something maybe a little risqué or just
850 something that I'd be uncomfortable with looking at you and saying.
851      Q. And so you think that brings people closer in a sense?
852      A. It can.
853      Q. Because maybe a certain wall is removed?
854      A. Yeah. Like a shy person, which, honest to God, you wouldn't think it,
855 but I really am. I -- you know, there are things that I just couldn't say
856 personally, but I could put it in writing and send it. And that gives you more
857 insight into who I am. Yeah, I think it can really break down the walls.
858      Q. I'm curious, also, with the convenience of e-mail in the sense -- you
859 know, it's really easy to just send somebody a little note or something like that.
860 So do you think that, even though the convenience sometimes works against
861 us in other ways, but sometimes it brings us together by making it easier to
862 stay in touch. Is that--
863      A. Sure. For instance, my older brother, who I don't like at all, had
864 surgery recently. I didn't feel like sending -- it was an operation on his arm.
865 You know, it was nothing life threatening. I didn't want to send him a get well
866 card, because there's really no -- I mean it's just, you know, do your therapy
867 and physical therapy. So I just sent him a little note on the computer -- said,
868 hey, Mom told me you had surgery, hope you're doing all right. And I didn't
869 have to get terribly personal. It was enough to let him know I knew what was
870 going on. I had some concern, but I didn't have to get personal.
871      Q. So -- well, that's interesting. It seems almost like there's a distancing,
872 and yet more of a closeness because it sounds like without e-mail you might
873 have not contacted him at all?
874      A. I wouldn't have.
875      Q. Whereas, it made it easier to be, like, a little bit personal, but didn't
876 force you to be a lot personal?
877      A. Yeah. It's -- it's easy. It was much easier than going out and trying to
878 find a card that wasn't mushy, and, you know, oh, you had this operation,
879 when it wasn't a big deal to begin with.
880      Q. Right.
881      A. So it was just easy for me to do it this way. And I could keep it
882 impersonal, and yet he knew at least I cared. I'm kind of going on both sides
883 of the issue.
884      Q. But it's that way.
885      A. Yeah.
886      Q. I mean it's not a simplistic sort of thing. Okay. Good. And this
887 is -- so you talked about closer and more distant. This is a little more specific.
888 Does e-mail help people communicate? Sort of a different--

889    A. Yeah.
890    Q. But along the same thing.
891    A. Yes. You know, again, it's a personal choice. You can use it that way
892    or not. But, sure, it makes it easier. It's so easy to sit down and type a little
893    something and send it off. You don't have to get an envelope. You don't
894    have to lick a stamp. You don't have to carry it to the post box or wherever.
895    Q. So less overhead, huh?
896    A. Yeah. And, you know, how much easier can it get? And it's cheap. I
897    mean it can be free. And it's not like a telephone call where you have to
898    respond, then, to the other person, you know. That could be -- like, I didn't
899    want to call my brother. I didn't want to talk about it. I didn't want to talk to
900    him. E-mail is just -- well, just easy.
901    Q. And so that brings me to kind of the other side of it. Does e-mail
902    harm communication or hurt communication, and, if so, how?
903    A. I keep saying it. But it's true. It's a person's choice. It could harm
904    communication. You know, if all I ever did was send an e-mail to my parents
905    and say, you know, how are you, what's going on there, that would harm our
906    communication. There's no caring feeling. You've gotta go beyond that.
907    Q. So are you suggesting if that's the only way you communicate, or
908    possibly if you let it stand instead of other ways that could communicate, is
909    that--
910    A. Yeah, uh-huh. You know, and then we're getting all into those
911    psychology of communication and all that. But just -- I don't know. E-mail
912    can be good or bad, depending on how the person decides they want to use it.
913    It can be a great communicator. It can be a horrible communicator. It's up to
914    the individual.
915    Q. Yeah. And I suppose some of this gets into, as you're suggesting, you
916    know, oral/spoken versus written language, and all of that is involved, too.
917    A. Yeah.
918    Q. So basically it can help, it can hurt, it's up to the user?
919    A. Yeah.
920    Q. And although would you argue -- do you think there are ways in which
921    it affects communication that, you know, maybe people don't think about it
922    that much, and so maybe it's people aren't aware of the choices that they're
923    making, but they're still making choices. Does that ring a bell?
924    A. Well, possibly. Now, you know, you said something there just getting
925    aside from the -- away from the personal part of it. Then e-mail is a great
926    communicator because it's so immediate. You know, not immediate to the
927    other person on the other end isn't sitting right there. But you -- if you need
928    to communicate something quickly, there it is. Just a for instance. When we
929    fly to Las Vegas, Mary, Cynthia's sister, e-mailed and said, "I need your
930    information. I'm going to be going out of town. I need it before I leave. E-
931    mail it to me." You know, so we didn't have to try and catch each other on
932    the phone. I got her the information that same day. So it can be real effective.

933   Q. So -- yeah. It sounds like really good for information transfer kind of
934   thing.
935   A. Yeah.
936   Q. If anything comes to mind, could you describe a particularly successful
937   or unsuccessful e-mail communication experience you've had? Just to give an
938   example, you know, have you ever maybe thought you've conveyed one thing,
939   and then when you got the response figured out that, wow, they didn't get
940   what I meant?
941   A. Oh, sure.
942   Q. You know, is there anything that stands out in your mind as really
943   negative or maybe something really positive that you're able to do?
944   A. I've established, I think, a couple of friendships through e-mail that
945   wouldn't have happened as soon. And I'm -- you know, I -- you and
946   Sue -- because we don't see each other.
947   Q. Right. Physical distance--
948   A. Yeah.
949   Q. Makes it hard.
950   A. But it's almost like a personal conversation when you go back and
951   forth. So that, to me, has been real positive. Negatively, I can't think of a -- I
952   know it's happened, because I've gone, "Oh, shit, I should've written that a
953   different way," whereas if we'd been speaking it wouldn't have been conveyed
954   the wrong way.
955   Q. Are you sure -- I mean I'm thinking with speaking sometimes things
956   still get conveyed the wrong way, but you can tell sooner--
957   A. Yeah. Yeah.
958   Q. If it's been received wrong?
959   A. Sure. You can fix it immediately.
960   Q. Yeah. And then back to the gender thing, do you think women and
961   men use e-mail differently? And if so, how so? If not, why not?
962   A. Oh, I think everyone uses it for correspondence to friends. But, again,
963   I think men probably use it more for business than women.
964   Q. I'm even thinking in terms of -- you know, okay. You could say men
965   use it more for business. But women use it for business some. Right?
966   A. Oh, sure.
967   Q. And then--
968   A. Yeah.
969   Q. And both use some personal. Do you think -- within those categories,
970   do you think men maybe do their personal e-mail differently from women. Or
971   do you think they do their business e-mail differently?
972   A. No, I don't think so. And, again, the only reason I think men use it
973   more for business is because there still are more men in the workforce than
974   there are women.
975   Q. Here's one for you. Do women use e-mail differently with other
976   women than they do with men? So women using e-mail -- do they
977   communicate differently with women they e-mail than they do with men?

978      A. Boy, that's a tough one. I doubt it. I doubt it. The reason I have -- I
979 think something to compare here is -- Cynthia gets e-mails at work. A lot of
980 those get forwarded to me, and most of them are from guys, because they'll be
981 about, oh, there's going to be a party Friday night -- da, da, da. So I see e-
982 mails that guys have written that are personal. So I do see those, and I really
983 don't see any difference between that and what -- how a woman writes them.
984 Does that make sense?
985      Q. Yeah, um-hum. I'm wondering -- does it maybe just depend on the
986 level of the friendship?
987      A. Sure.
988      Q. That the--
989      A. Sure.
990      Q. So are you thinking that's really more the difference rather than any
991 kind of gender?
992      A. Yeah.
993      Q. If there is a difference, it's because of the level of the friendship?
994      A. Sure.
995      Q. Finally, we're going to move on to the Internet. Just in general, what
996 do you think of the Internet, or how do you feel about the Internet?
997      A. Yeah. It's a whole world of -- you can find out anything, and more
998 than you want, about anything out there. It still is a little bit -- not scary to me.
999 I'm not scared of the computer anymore. But just overwhelming, I guess.
1000 Like, God, how can all that information be out there? I'm in awe, I guess, of
1001 it.
1002      Q. In awe. Okay.
1003      A. Yeah.
1004      Q. And is it in terms of there's so much out there, but I'm not sure how
1005 to get to it. Or is it there's so much out there, how will I ever have time to get
1006 to it? Or how is that feeling of awe?
1007      A. Really, neither of those. Just that there is so much information
1008 available at the touch of a finger.
1009      Q. And that's new?
1010      A. Yeah.
1011      Q. Yeah. That makes me think of e-mail versus -- or Internet versus, say,
1012 going to the library sort of -- you know--
1013      A. Yeah.
1014      Q. Don't even have to leave your home and--
1015      A. Yeah.
1016      Q. Do you ever think about, like, the reliability of the information out
1017 there?
1018      A. Oh, sure. But most of the sites I go to are not ones where I would
1019 really have to be concerned about that. You know, I'm not -- I don't do a lot
1020 of research sort of things.

1021    Q. Okay. So that's kind of in general. So how do you use the Internet?
1022    You've talked a little about it, but what are the ways you use it and ways you
1023    don't use it?
1024    A. All right. I definitely use it for job search. I use it for fun things. You
1025    know, like I said, recipes, travel. I have not booked. I'm still leery of putting
1026    my credit card number out there. I just don't like to do it. But I still will
1027    research travel, get flight numbers, and then I call a travel agent. I've gone to
1028    some of those shopping networks and looked, but I haven't bought anything.
1029    Q. But you can look at a lot of different stuff and get ideas that way?
1030    A. Yeah. Yeah, I did that with REI the other day. Said I want to
1031    get -- I've got a gift certificate, and I want to spend. And I just went out and
1032    looked at what they had and what's on sale.
1033    Q. Yeah. Sort of an on-line catalog?
1034    A. Um-hum. Yeah, those are great.
1035    Q. So you've got shopping, job search, fun stuff, travel research.
1036    Anything else?
1037    A. I've used it -- a friend needed help finding another person in another
1038    city, and, in fact, I did, too. I found a friend of mine who now lives in Seattle
1039    that I went to school with in Michigan.
1040    Q. How did you do that?
1041    A. Typed in her name and then typed in the city I thought she might be
1042    living, and she wasn't. But then it told me where she was.
1043    Q. Oh, wow.
1044    A. Gave me her phone number.
1045    Q. Was this a specific search engine that you used or--
1046    A. I went on AOL search.
1047    Q. Oh, okay. So kind of like -- sounds sort of like if you're in the phone
1048    directory maybe, or something like that--
1049    A. Oh, you're -- you're in there.
1050    Q. Okay. Well, that's interesting.
1051    A. Um-hum. Oh, and then it'll even draw you a map right to their house.
1052    Yeah.
1053    Q. How do you feel about that? Is that a good thing, or is that--
1054    A. No, it's not a good thing. But, you know, we're stupid if we don't
1055    know that anybody can get anything on us at any time. And mostly it's
1056    because of computers and the Internet. There's all kinds of information about
1057    you and me out there right now that I wouldn't want someone to get, but they
1058    can get it.
1059    Q. Yeah. That's not even thinking about our e-mail messages--
1060    A. For which you could go to prison.
1061    Q. Yeah.
1062    A. So, you know, here I am saying I'm hesitant to buy anything on line
1063    because I'm going to have to give out a credit card number. Well, hell, you
1064    could get that, anyway, if you wanted it.
1065    Q. Yeah. Well, it's just caution shows up in interesting places.

1066      A. Yeah.

1067      Q. Okay. But you do feel that the Internet and computers have maybe

1068  just made it a lot easier--

1069      A. Sure.

1070      Q. To access all that stuff?

1071      A. Yeah. I have used it, also, to look up medical things. You know, like I

1072  said, it's kind of just referencing and, you know, what medicines to take

1073  and -- da, da, da. There's some good medical sites out there.

1074      Q. Yeah. I've found you can -- like, with herbs and things like that.

1075      A. Yeah.

1076      Q. Great. And so what's it like when you're using the Internet? What

1077  does it--

1078      A. I'm still a little frustrated, because I'm pretty new to it. And I have to

1079  probably go through a lot of different channels to finally get what I want,

1080  versus someone who really knows what they're doing and can zero right in on

1081  it.

1082      Q. So channels -- again, that sounds like an AOL sort of thing -- specific

1083  kind of to the way they lay things out.

1084      A. Well, it's -- no. It's not just AOL. Yahoo -- really, any -- any search

1085  engine -- there's just -- there -- you know, you can go directly to something if

1086  you know how. Or if you're like me and are still new to this, you've gotta find

1087  how to get there sometimes. And I might go to, you know, six or seven

1088  different sites before I finally find that one I was really trying to get to. But

1089  that's just my own ignorance, still, at being new at this. I guess, also, it's a little

1090  intimidating sometimes, because if you go out to a website, depending on who

1091  designed it and how, there's so many little spider things. You finally get to a

1092  website that deals with a subject you want. But then there are click here for

1093  information on this. Click here for more information on that -- da, da, da, da,

1094  da, da, da, da, da. And there's just way more information than you really

1095  wanted.

1096      Q. More -- all you wanted to know and more?

1097      A. And more, yeah.

1098      Q. And so do you find it just -- is it with so many choices it becomes

1099  difficult to know where next? Or--

1100      A. Exactly. And it becomes real time consuming. Even -- you know,

1101  even something as simple as REI the other day when I went out there, I just

1102  wanted to see products. Well, they had winter sale products, and they had a

1103  separate category for this and this and this, and it just went on and on and on

1104  and on and on. I was looking for something for someone for Christmas -- a

1105  walking stick. You know, I looked under hiking. I looked under camping. I

1106  looked under winter sale. And so I spent a lot of time.

1107      Q. So, yeah -- time consuming based on how the website is set up?

1108      A. Web design.

1109      Q. Yeah. And so does it seem like they're all kind of designed a little

1110  differently, and--

1111     A. Oh, yeah.

1112     Q. Yeah. So figuring out the logic of where they've decided this thing
1113 ought to be?

1114     A. Yeah.

1115     Q. It just occurs to me now. I wonder if there's an argument for some
1116 kind of standardization there. It's nice that there's such a variety of stuff.
1117 But--

1118     A. Yeah.

1119     Q. But sometimes--

1120     A. Well, it's just -- it's all in the hands of the person who designs that
1121 website, and, you know, are they really thinking of it logically, or are they just
1122 trying to get fancy and see how many bells and whistles they can put in. Some
1123 of them do that.

1124     Q. Kind of what's the motivation behind the--

1125     A. Yeah.

1126     Q. Where is the web designer's ego?

1127     A. Yeah.

1128     Q. Then, overall, do you see the Internet as -- or perhaps I should ask
1129 how do you see the Internet as helpful? Is it helpful or harmful or both?

1130     A. Definitely both.

1131     Q. And in what ways do you see it as--

1132     A. It's helpful because there's information right there at your fingertips 24
1133 hours a day, you know, every day of the week. And, you know, it's just
1134 convenient. And, you know, there are so many ways that it's
1135 detrimental -- you know, all the porn that's out there and the creeps who get
1136 out there and -- pedophiles, et cetera. I think it's opened up a whole new
1137 arena for crime.

1138     Q. And then you mentioned earlier the -- almost the sense of being
1139 overwhelmed with so much information. Do you consider that a detrimental
1140 thing, or do you feel like that's just--

1141     A. No.

1142     Q. Getting used to it?

1143     A. That's getting used to it. The more I use it, the more it'll make sense.
1144 Just like when I started using a computer. That was overwhelming.

1145     Q. And then do you -- here we go. Do you think men and women use the
1146 Internet differently? And if so, how so? Or if not, why not?

1147     A. I think probably not too differently. You might get into gender sort of
1148 things. Like women might tend to go out and look up recipes more than a
1149 man. But I think basically the basic premise is the same. There's information
1150 out there. You go out and get it.

1151     Q. So maybe they might look up different types of information, but
1152 they're basically both looking for information. Is that--

1153     A. Yeah. Yeah.

1154     Q. And then sort of related to that -- I'm going to question you just a little
1155 deeper. Basically looking for information -- that's what you primarily use it

1156    for. But do you have any thoughts on some of the other ways it's used? You
1157    know, like, there are chat rooms.
1158        A. No.
1159        Q. You've said that you avoid those.
1160        A. Yeah.
1161        Q. Or is that just an area that you don't really know or speculate about?
1162    Do you have any thoughts on that?
1163        A. I -- you know, just from what little I know, I think that there are a lot
1164    of danger sites out there, and chat rooms are one of them. Now, I've done
1165    chat rooms and seen some pretty nasty stuff -- just filth and people saying
1166    nasty things to people they don't even know -- just real unhealthy. I think
1167    there's a real dark side to the Internet.
1168        Q. And you feel like chat rooms might be one of those places?
1169        A. It can be.
1170        Q. Yeah. Not necessarily, but--
1171        A. Right. Yeah. On the other hand, I used a chat room before we moved
1172    up to Washington to talk with people in different cities to see, you know, how
1173    they like living where they live and why, because I was considering different
1174    places. So that was a positive thing.
1175        Q. So what would you suggest people do in terms of chat rooms? What
1176    do you think is a way to--
1177        A. I'd just be -- you know, once you log into one, I read what people are
1178    talking about and see if it's something you want to get involved in. I don't just
1179    jump right in. Plus, you gotta know that once you're in there, they
1180    can -- anybody can get your I.D. And that's how I get sent tons of porn. At
1181    least this is what I'm told. Now, I don't know. But I was told that because I
1182    got into these chat rooms my sign-on for AOL was just available to anybody,
1183    and that's why I get all this crud.
1184        Q. So is that why -- you mentioned earlier that you avoid chat rooms.
1185    And is that why -- or do you avoid them?
1186        A. That's one of the reasons, yeah. If that is true, that's a major reason I
1187    avoid them, because I already get so much garbage and porn sent to me, I
1188    don't want any more. But then, too, I just -- I hadn't -- I didn't very often get
1189    into a chat room that was a good experience.
1190        Q. So a lot of the unhealthy stuff you were talking about earlier?
1191        A. Yeah.
1192        Q. More so than the -- so the useful/helpful stuff felt more like it was the
1193    exception?
1194        A. Yes.
1195        Q. Okay. I guess -- and that's an area where I would wonder if men and
1196    women use Internet differently, is in chat rooms?
1197        A. In my experience, yes. The filth and just the nastiness was mostly
1198    boys. And -- well, that's just it.
1199        Q. And how did you know that it was boys?

1200       A. Most people identify themselves. They'll say, you know, I'm male, 42.
1201  Just generally they'll ask. You know, as soon as you sign on someone says,
1202  "Tell us about you."
1203       Q. And do you think people are, by and large, mostly honest?
1204       A. Yeah.
1205       Q. I mean in answering those questions?
1206       A. Yeah. Uh-huh. And then a lot of people, too, I've found had a
1207  personal profile set up. You can do that, and, you know, I've checked them
1208  out.
1209       Q. Is there anything else that you'd like to add to what we've talked about
1210  just in general that you'd like to say about computers or any other uses or your
1211  own experience?
1212       A. Well, I just -- I'm glad that I finally jumped on the bandwagon and got
1213  with the program. I still am behind where I would like to be. But I at least
1214  feel good about where I am, and I can talk somewhat intelligently about them.
1215  And, you know, if anybody doesn't think that they don't need a computer,
1216  they're wrong.

# Appendix D: Dale

1       Q. What image(s) does the term, "technology," bring to mind?

2       A. The first image was a right brain response. You know those art
3 projects that are garbage welded together, discarded pieces of tin, chains, cogs,
4 spokes. That's my first image, discarded pieces of circuits, wires, nobs, reels,
5 connectors, typewriter keys, rotary telephone dialer, a collage of discarded
6 progress. The image holds history and memory.

7       The second image is, of course, the web. The computer is this century's
8 single most important invention in the field of technology because it connects
9 the world and space. It connects you and I in this moment of communication.

10      Q Do you consider yourself mechanically or technologically inclined?

11      A. I do consider myself mechanically and technologically inclined, but
12 culturally those areas were always left to the boys. I grew up in the 50's and
13 60's. It wasn't feminine to be interested in the mechanism of transistor radios
14 and stereo equipment. Girl's interests were clearly spelled out in my family and
15 social connections. However, I had two older brothers. They liked me to
16 hang around them. I was accepted because I didn't rat on their exploits. My
17 older brother took everything apart to see how it worked. I watched him for
18 hours. My other brother was an artist and drew everything. Neither of those
19 areas was encouraged for me to explore, so I didn't dare.

20      But I did see within myself at a very early age that I could figure things out,
21 how they were put together and how they functioned. I learned to sew at age
22 11 and it had to keep my sewing machine unclogged of thread, oiled, etc. I
23 learned to fit things together from sewing patterns and working with my
24 sewing machine. I also learned to type on a manual and had to keep it oiled
25 and the keys untangled.

26      I didn't approach a computer, or ATM machine until I was about 33. My
27 new husband explained everything to me so that I could understand it, step by
28 step, and didn't make me feel uncomfortable about my fears and hesitations of
29 the machine. My first computer course was in '83. I had to write a paper on
30 the mechanics of the inner system from game board to wires, but in spite of
31 the course I kept to my IBM selectric until '93. That's another interesting story.
32 If there isn't a question to cover that, then I'd like to tell you more in this
33 question of how I basically make the switch from typewriter to computer..

34      Q. Yes, writing a paper on the mechanics of the inner system from game
35 board to wires in '83 and then keeping to your IBM selectric for writing until
36 '93 does sound fascinating. Let's go to that right now, and if other questions
37 allow you to add to it or refer back to it later, that's fine. How did you switch
38 from typewriter to computer? Why did you wait 10 years?

39      A. Let's see, the paper I wrote was in reference to the book by Joseph
40 Weizenbaum, Computer Power and Human Reason--From Judgement to
41 Calculation. I still have the book if you wish to borrow it. I don't remember
42 much, but essentially it was about how games, like chess, are a formal language

43    with pieces, a board, and rules to that explain how to transform the beginning
44    state into a match and a win.  He then moves from language and games into
45    how the computer works as a mechanism, as a language, information
46    processor etc.  He covers belief structures, psychology, religious, philosophy,
47    ethics, and more.  The book was way over my head in many ways back in '83
48    and yet I grasped some essence, enough to manage an A, which is hard to
49    believe, since technology evaded me.   I kept my paper to ethics and religion.
50    Now, looking at the book,  I'd be interested in tackling it again.  Now that my
51    intuitions, instincts, emotions, as well as intellect has developed to the point
52    that I might comprehend what this guy was saying.  Will computers ever be
53    able to express hopes, fears, wisdom, intuition, kinesthetic knowledge etc?  I'm
54    rambling, but you get the picture.  I was surviving in those days, not
55    contemplating if we can program what it is to be human into a computer.
56    Since I spent the last three years at an institute whose mission statement is
57    "tending the soul of the earth," I would now read the book through the lens of
58    soul/psyche and technology....
59        Q.  What prompted you to take the computer course in 1983 in the first
60    place?  What kind of course was it?
61        A.  In '83 I attended Reed College for a year and a half, majoring in
62    Classical Greek history & language.  All language students had to take Natural
63    Science which included a computer course.  Because of my dyslexia, I had
64    difficulty being introduced into the system of computers so my husband Carl
65    was allowed to attend lab with me and assist me.  As long as I logged onto
66    their modem (sp) so many hours per week, doing the exercises and then
67    completing the paper, they didn't care if he tutored me.  I did it, but it was
68    early in my development, even though I was 33-- I was a late bloomer--in
69    some ways and early in others.  I got an A in the course, but really didn't learn
70    anything that I could relate to, so I just reverted back to my IBM Selectric.  I
71    was a secretary for years and it seemed like home, familiar.  The computer was
72    too foreign.
73        The change came, and none too soon, while attending Marylhurst in '93.
74    (It took fourteen years to complete my BA, raising five kids (His and mine)
75    and working.  Anyway, I was going to school,  my last year, full time and
76    working full time in a management position.  I was incredibly organized and
77    reached a point when my husband noticed one day while I was sitting on the
78    floor in the living room, cutting and taping strips of things I had written
79    together.  It made about a five foot scroll.  He asked what I was doing and I
80    naively told him that this was how I constructed all of my papers:  hand
81    writing some things, clipping quotes, typing some things, and pasting in class
82    notes.  He had no idea that I worked this way because I did it all mostly after
83    he had gone to bed.  He told me that I just had to learn to type and edit on the
84    computer.  So I agreed to spend fifteen minutes a day doing whatever he
85    instructed me.  Within a few days, I  was spending more and more time
86    learning Works and loving it.  It was finally my time.  And by '93, computers
87    were easier to understand, much more user friendly.  I kept my last long scroll

88    of taped together pieces of yellow and white paper. I never used the
89    typewriter again for papers, but continued to use it in my office for
90    correspondence to residents. It was easier to stay in a familiar pattern. Our
91    company did, however, have to put our accounting system on a program that
92    each manager had to learn and because I had spent the previous year typing
93    my papers, I learned it quickly. Two managers left and refused to learn.
94    Learning that program translated easy for me when I left the corporate life and
95    needed to manage the books for my husbands company while attending grad.
96    school. Incorporating technology into my life has simplified it. I couldn't have
97    made the transitions that I have made and at such a rapid pace over the past
98    six years without the computer. I just couldn't have been done. I readily
99    admit, my husband and soul mate has been the person behind the scenes
100   encouraging and teaching me. He has helped me manage and virtually
101   overcome my issues with dyslexia. I don't even notice a problem regarding the
102   computer.
103        Q. Who and/or what has influenced your thinking on this?
104        A. I had two influences. Society influenced me to not me mechanical
105   because it wasn't feminine. But I influenced myself in thinking things through
106   for myself. I had a huge inner world in which I would explore ideas that I
107   didn't tell anyone about. I had an abusive mother so I kept a private inner
108   world. I use to amaze myself when I figured things out for myself, but it was
109   never safe to let anyone know that I knew how to do things like the boys,
110   things like fixing my bicycle chain and repairing a mechanical toy. I will say
111   that although I can do certain things, they don't always interest me. I could
112   probably do more on the computer, but it doesn't interest me. I enjoy things
113   that I consider more meaningful, like art work, writing, reading....studying.
114   Technology is too impersonal, inhuman. I use it as a tool, but can't immerse
115   myself in it. I immerse in other things.
116        Q. What does the term, "computer," mean to you?
117        A. The term "computer" means different things to me now than it did in
118   '83 when I was first introduced to the word. Then, it just meant challenge!
119   Today its meanings vary. It's an extension of my own brain. It can compute
120   information and manipulate information that I cannot. It aids in research so
121   that I can access libraries, documents, dissertations, articles etc. It allows me
122   to communicate with friends, family, colleagues, and other contacts almost
123   instantly which speeds up processing work and communications. I still write
124   letters, but communication doesn't have time to get "cold." So thoughts can
125   be conveyed rapidly, then response can be almost immediate, etc. allowing for
126   a different kind of communication than letters. I somewhat take on a different
127   persona at the keyboard. I'm bolder, more confrontative/assertive, I don't let
128   people get away with remarks that I might let slide in person, remarks that
129   wouldn't show up in letters. I'm more poetic in letters and more humorous,
130   scholarly, business-like, encouraging....just different at the keyboard. Others
131   have noticed it.

132    I'm more extraverted, that's what it is. I'm an intravert, but really a closet
133    extravert....or a balance between both ways of being. The keyboard draws that
134    extraversion out of me...letters don't. So I guess that I would say that the
135    computer accesses or taps into an alter ego, extraverted way of experiencing
136    the world and relationships in general.
137    It has taken on an almost sacred meaning as far as its value and reliability
138    as I go to it daily and it assists me to develop and produce my work. It assists
139    my imagination. Because it processes so fast, I can type faster on the
140    computer than a typewriter and so spontaneous insight and creative
141    adventures come alive at the key board. I wrote my first fairy tale last year and
142    the computer made it happen.
143    Q.   What was your first experience with a computer like?
144    A.  I've already explained some of my first experience with a computer. It
145    was terrifying. I didn't have a choice because it was part of the required course
146    of Natural Science, interesting? I spent hours and hours in the lab and at
147    home on the modem. It was tiring, frustrating, boring, and I didn't get it.
148    Even after reading that book and writing a huge paper, I didn't get the
149    computer's value in my life.
150    I remember crying over the frustration. My husband was key in helping
151    me comprehend it. He was patient, kind, and a good teacher. The instructor
152    was indifferent, had no tolerance for slow thinkers (not that I was, but it was
153    my first introduction to a mechanism that operated on so many levels and I
154    was lost) When I returned to the keyboard 10 years later, I was ready. I
155    understood the procedure and things made sense. I know that my mind had
156    developed through the years, it that are in '83, I was a baby.
157    Q. When/how did you first really learn to use a computer? What
158    questions and/or concerns did you have?
159    A. My husband taught me. I don't know if I would have ever been
160    curious enough to approach the "machine." My husband drew me to it by
161    talking about how it would enhance my work and promising to take it slow
162    and help me work through any frustrations. I main concern was that it was so
163    foreign to anything I could even relate to that it terrified me. I was sure that I
164    would push a button and lose information and completely ruin the computer.
165    Carl helped me to understand that that was nearly impossible. That things
166    could be retrieved and that it was more friendly than what I had heard. I think
167    that I was afraid that I would never be able to do it and that I would be
168    humiliated.
169    Q. Who/what helped you find out what you needed to know?
170    A. My husband helped me find out all that I needed to know, as I have
171    already explained. Also, when our company expanded it's accounts
172    department to have computers in each of our office on site and insisted that
173    each manager learn the program in accounting and then do all of the input on
174    site rather than down at the corporate office...we use to send our money and
175    paperwork down there daily. This eliminated that. I was prepared to learn.
176    My instructor was a young woman who was nearly a genius at it. She was one

177  of the best teachers I've ever had. She said that I picked it up the quickest and
178  actually understood the accounting system better than any of the other
179  managers. This was a real boost to my self esteem!
180      Q. Who/what hurt your ability to find out what you needed to know?
181      A. The only thing that hurt my ability in finding out what I needed to
182  know is when I had to call a company to talk about something regarding a
183  computer. To this day I can't. I don't know the language, I can't understand
184  their questions, and it's a waste of both of our time. I can understand certain
185  programs, but not the mechanism and language of the computer world and I
186  don't think I ever will. It just doesn't interest me...there's not enough meaning
187  in knowing it. I'd rather hire someone to do it for me.
188      Q. What else would have helped you find out what you needed to know?
189      A. I guess I'd be up shit creek without my husband. I go to him for what
190  I need to know. I just learned a new program for doing the books for his
191  business, but I watch him download, slip in new programs, manipulate
192  screens...and a lot more that I don't know what it is called and it makes my
193  head spin. I do want to learn desk top publishing and some of the art stuff.
194  And I'd like to know how to do a few more things in Word that even he
195  doesn't know. I can run Word better than him now that I've been doing it for
196  three years, but I watch other people and they do all kinds of stuff besides
197  cutting and copying that I would like to eventually know about. I'll probably
198  take a course down at the community center.
199      Q. What has been your best/worst experience with a computer?
200      A. My best experience was writing directly from my imagination and
201  producing a great story. The computer linked right to my brain, psyche, body
202  on some level and it functioned as an extension of me. My worst experience
203  was my first experience at Reed College. Too much was expected with no
204  personal caring to help me.
205      This is kind of a weird thing, but I'm going to tell you anyway. I have an
206  unusual amount of extra electricity that runs through and exudes out of my
207  body, for whatever reason we could speculate....witch? Hundreds of times I
208  have walked or driven under street lights and they go off or on. I freak out my
209  girlfriend sometimes because it happens so often. My electricity screws up my
210  computer more often than is comfortable, but only when I'm doing the
211  accounting program. Over and over the screen locks. It never happens when
212  my husband is doing it. He watches me do it and lock up the screen and
213  knows that it's not because I'm doing it wrong. Our energies just don't always
214  function well together, the computers and mine. Go figure?
215      Q. Have your thoughts/feelings about computers changed from early
216  experiences to present? How? Who/what has influenced this change?
217      A. My thoughts and feelings have changed greatly about computers. I
218  have already answered this in another question.
219      Q. How and where do you use the computer/what primarily do you use it
220  for (work, home, work-at-home)?

221     A. I have a work space that I use the computer for work and
222     research/school/dissertation. I use to have a room of my own, but my
223     youngest son moved back with me after 10 years of absence, living with his
224     father. He'll be 21 this month. It's interesting. He moved in with me the
225     month that I started grad school and moved out the month I completed
226     school, synchronistic. I gave him my room and set our loft up as my space. It's
227     a 16x16 space with a sofa bed, book cases, two desks and computer. My desk
228     is used for both work in my husband's company, my work, and school. We
229     don't have our home finances on the computer yet. My husband has his own
230     home office, but sits at this desk to access his accounting system. That worked
231     fine over the past three years, but now that I'm beginning my dissertation, I
232     must have a room of my own. I could move back into my old room, but it isn't
233     insulated and is located right next to Carl's office and he's on the phone all
234     day. So we are insulating, sheet rocking a room that was originally set aside for
235     a second bathroom, but we don't need it. We have been using it for storage.
236     I've removed all of the storage and for Christmas I had a large 4x5 window put
237     into it. It has a 15 foot ceiling, with three clearstory windows high close to the
238     ceiling. My daughter says that it has a magical feeling. She felt it when we first
239     built the house four years ago. My daughter is 31. She said, "You must use this
240     space for writing, mother, I feel the magic here." So I am.
241     I going to have my own keyboard and monitor for dissertation work only.
242     My son works for In Focus and he's going to eventually get me a used
243     computer. I use my computer equally for work and writing/school/email. I'm
244     on it everyday.
245     Q. Does your computer have a name?
246     A. Does it have a name. Wouldn't have occurred to me. I know I was
247     fond of my sewing machine. I quit sewing about 14 years ago, but kept it, a
248     Pfaff, German made. My computer is important, indispensable for work and
249     my future work. I care about it, but have not personalized the caring, like
250     dusting it, talking to it, touching it, etc. I knew someone who had some kind of
251     affair going with her machine...there you go, it's impersonal, a machine. My
252     husband grew up with machines in the machinery business. He talks to his
253     computer etc. and has a fondness for machines in general. I'm fond of my car
254     because I bought it. This computer was a hand-me-down from my husband's
255     company. Whenever (often) he upgrades, I get his seconds...I'm grateful, but
256     not attached. If something happens to it, we'll just get another, or he will and
257     I'll get his old one. At first, when I left the corporate world four years ago, I'd
258     sit at his desk and use the accounting system on his desk. That didn't last long.
259     Because I had already established a territory with a private office when I was a
260     manager, I couldn't give that up. So he quickly bought a new computer and set
261     me up on my own space which obviously worked better for the both of us.
262     The computer is like an extension of my husband. I'm so right brained, that he
263     speaks to my left brain through my right brain for me to understand....now
264     obviously that's not completely accurate. I just completed my graduate studies
265     with a 3.9 and most of the work is in research so I'm obviously also quite left

brained, but I write and follow ideas for research using a great deal of my intuition and following clues etc. The computer....I just don't think I would have braved this world without the kind of guide my husband has been to me, where would I have found one....knowing what I do now, I probably would start looking for a private tutor, say if I lost my husband. Let's see, how can I put that more clearly? It wouldn't have occurred to me to begin learning the computer because I saw it as a glorified typewriter back in '93. He showed me how it was so much more and does that by seeing what I need and showing me how to use a function of the computer that assists my way of being and functioning in that way of being. So he says things like, "You know how you do this? Well, the computer can help that by doing this and this?" I never stretch beyond those given instructions because I don't seem to have a curisoty to take it further on my own. Every once in a while he shows me something else. I trying to think about what that says about me. If something were to have happened to him before he taught me how to use it, eventually I would have looked for a tutor that specializes in right brainers, but I doubt if it would have been before graduate school. Carl prods me along in technology field.

Q. Do you talk to the computer? Describe how you talk to it (what you say, how you say it).

A. I never talk to the computer.

Q. Do you have a favorite joke about computers/users?

A. I haven't heard a joke that I liked about the computer. There have been several that come from classmates regarding computers, but I don't like most jokes in general. So many jokes tend to capitalize on someone's gender, weakness, ethic origin...I hate all of that. I do have a sense of humor, but not regarding most jokes. I've never read the funny papers either.

Q. Where do you keep your home computer? Why?

A. My home computer is presently shared with office space, but will soon have a room of it's own as I have described. Why? for privacy in writing, privacy from everything. No one will enter the room without my permission....can't wait.

Q. How would you feel if you no longer had access to a computer? Would you miss anything? What would you miss the most? What would you not miss at all?

A. It would be very difficult to not have a computer. I could go back to my typewriter and eventually adapt because it was more personal for me that the computer....here's my typewriter story. I learned to type in high school, but we had an old Underwood at home that my dad used when he went through Bible college in the late 50's, early 60's, along with six kids! The typewriter was from his father's business office, an old saw mill. He had it refurbished and took it to Bible School. When I went to college in "80, he gave it to me to use. I still have those papers. I met Carl in '81 and when he saw what I was typing on, he couldn't believe it. His first gift to me was the IBM that I kept for 10 years. (We knew each other four months and got married, our third marriage each. We just celebrated our 18th year together) I just haven't personalized the

311    computer like I did the typewriter. The typewriter was connected to my father
312    and then to Carl. This thing is so impersonal, cold, like a monitor in a hospital
313    (which is obviously a computer), but I need it. I just don't know how to allow
314    it into my emotions, it stays Other.
315       I would miss being able to have the advantages that it provides, but I think
316    as a writer I would cope on a typewriter....but then, how would I do my
317    research on the internet? Library research? Cut, copy, paste...email? I guess I'd
318    miss out on a lot, wouldn't I? (It's snowing here, just thought I'd tell you) I was
319    just introduced to research last year so it's really new and still foreign. I haven't
320    done much....on the computer, I'm speaking of. I've sat in a library and poured
321    over books etc...but the computer takes me into worlds I wouldn't have
322    imagined I could go...although it is new, I can see how I will need it to write
323    my diss and in the future as I grow in my ability to access things...and grow in
324    curiosity! My husband says that I have injured curiosity from my abusive past.
325    He's right.
326       Q.  Do you think men and women use computers differently? If so, how
327    so? If not, why not?
328       A.  I think that men in general aren't as afraid of machines, but I think that
329    it's more a difference of left and right brain users vs gender. I know men who
330    are petrified of it. One interesting thing. My son, Gracen, has only a fifth grade
331    education....long story. He was introduced to video machines in his hi chair.
332    When he came here, he wanted to know about lizards, he has four, so Carl
333    showed him how to access the internet and within minutes he was buzzing
334    through channels with no fear, no hesitation, and an awareness of how the
335    channeling worked...all mostly on his own. I don't have that function
336    developed in my brain. I have little curiosity about the mechanics, little
337    imagination about what I might look up...etc. I always go back to books and
338    reading. I think that eventually that may mature in my brain in the natural
339    course of things...where it's right there an accessible in my son's. I watch my
340    two grandchildren being introduced to computers. They now have one at
341    home. They're 12, Annie, and 9, Codey. They are both whizzes because it was
342    introduced at an early age at school.
343       My husband is lost in the kitchen because he sees the complication and
344    won't stop and learn about what makes what or goes in what. He's certainly
345    smart enough to learn, but he sees the work and effort it takes to make it good,
346    let alone great. He chooses to do simple things in the kitchen. (Both my son's
347    are cooks and neither of my daughters are particularly interested in the kitchen
348    for more than just get by. It's not a gender thing. Carl's brother is a chef at
349    Niki campus....actually the head chef. It's preference and familiarity. Carl
350    doesn't work on cars, but he can and did when he was a youth. He hires it all
351    now. It's preference....but computers? I think the initial hesitation and fear of
352    the computer was a gender thing...boys are introduced to machines in general
353    by their fathers and they make the emotional connection of doing what their
354    dads do and teach, like with me and the kitchen, so girls my age hesitated, but
355    that's not true for the most part any more.

356    I think that men and women approach most things in life differently in
357 general because we are different from one another although some experts want
358 to water that difference down and some eliminate it....that won't happen in my
359 opinion. For me my husband sees his computer as an extension of himself, I
360 see it as an extension of him or the masculine, left brain. I really have to think
361 about this more. Masculine being a function of the psyche that's in both men
362 and women, not gender based but function based.
363    Q.  Does one sex/gender enjoy computers more than others?
364    A.  Enjoyment level? In the corporate world, I saw women enjoying the
365 computer much more than the men. For the men it was like I said, an
366 extension of themselves, impersonal. But the women had relationships with
367 their computers and babied it, vacuumed the key boards, dusted and decorated
368 it. The one guy who had little dinosaurs all over it was gay. He was great! It's a
369 tool for the guys like a drill. For me it's more of a tool, but it wasn't for the
370 women I've known.
371    Q.  Do you think of computers as "he," "she," or "it"? Why?
372    A.  Off the top of my head, I'd have to say that the computer is "he." But
373 I didn't know I felt that way and I might change my mind if I could see it
374 differently than I do presently.
375    Q.  Are computers/software programs inherently designed to be more
376 user-friendly for people who think in a certain way (e.g., linear versus non-
377 linear, male versus female, programmer/software designer versus user)?
378    A.  I've only used two programs, well three, Works, Word, and
379 Quickbooks. I think they are left brain designed. I understand accounting and
380 bookkeeping, so Quickbooks makes sense to me based on that. That's how I
381 learned the system so quickly when I worked in Portland, I understood
382 accounting so the computer program just was a template over what I knew.
383 But that's why I get so lost when I venture out. I don't think like the computer
384 thinks and so my husband translates it into something that I do think like or
385 know, otherwise I either memorize it or keep a note on my desk to remind me.
386 My husband has done some programing and it makes perfect sense to him. I
387 think that they are definitely more linear.
388    Q.  If so, does this design made it easier or harder for you to use the
389 computer? If so, does this design made it easier or harder for you to use the
390 computer?
391    A.  The design makes it much harder for me to use. I rely on the icons and
392 written helps when I can't figure something out. I've a visual, tactile learner.
393 But.....my son Josh is an artist and worked himself up form temporary help on
394 the assembly line at In Focus to the personel department because of his
395 communication skills, to the special mail room, to the position that he has
396 designed which is communications acquisitions etc. He is self taught on the
397 computer, has only two years of college, mostly liberal arts, and is masterful on
398 the computer. He now makes $60,000 a year after four years. He is bright but
399 has worse dyslexia than me. He quite an accomplished artist and sells his work,
400 abstract. He does research and acquisitions and flies on the touch sensitive

401 mouse thing. So what am I saying. He's highly right brained, and has found a
402 way to use the computer that works for him. It's like it opened a channel in his
403 brain he didn't know he had. I'm kind of going in circles, but then most
404 women do reason in spirals and not linear...and I've never thought about any
405 of these questions before so I'm kind of shooting into the dark and trying to
406 really understand what I mean. I hope it makes some sense to you.
407
408 Q. Do you do any kind of writing on a regular basis?
409 A. I write everyday. I would consider myself a writer.
410 Q. What kind(s) if writing do you do?
411 A. I just completed graduate studies at Pacifica Graduate Institute in
412 Mythological Studies. All of the courses are designed around essay writing. So
413 for the past three years I have written three 12-15 pages per quarter, four
414 quarters a year. I also do creative writing, short stories, fairy tales, and am
415 beginning my first book which will be expository writing. I am also now
416 working on my doctorate for the next two years which will consist of
417 approximately 300 pages of both creative and research writing. I also write at
418 least a half dozen letters a week either on email or hand written.
419 Q. Do you use the computer when you write?
420 A. I use the computer for all of my writing except some handwritten
421 letters. I know of people who take notes as they read on their lap top, but
422 note taking is also done by hand. I will be getting a lap top this year some time
423 which may change my note taking.
424 Q. If so, at what stage of the writing process do you use it (prewriting,
425 first draft, final draft)?
426 A. I use the computer for all stages except taking notes from books and
427 journal writing. I write out my dreams and write in my journal at least four or
428 five times a week which is done by hand. But all first drafts, prewriting, and
429 final drafts are done on the computer.
430 Q. Has the computer helped your writing in any way (process, final
431 product, convenience, makes it easier)?
432 A. The computer has helped my writing tremendously. I rarely need to
433 prewrite or even write rough drafts. Over the course of the past three years, I
434 have progressed in research enough to put out a pretty good first copy with a
435 couple of sessions of editing. I have always loved to write, even in high
436 school, but struggled terribly on where to begin, confidence in beginning and
437 expressing myself, and organizing my thoughts. The computer has completely
438 revolutionized, along with my education, the organization of my thoughts. I
439 read, research, until something clicks. Then I follow that thought through what
440 I've researched with a half dozen to a dozen pages of notes, then when I sit
441 down at the computer, I'm ready to begin with my idea. The trick has come
442 for me to read until something clicks. If I'm struggling with an idea, then I
443 automatically know that I haven't read enough, so I just keep reading. Often,
444 by the time I 'm ready to write, I have researched enough material for three or
445 four papers. So I categorize my notes and store them for future papers. Some

446      times I set out to research a topic and find that I already have the research
447      done. Then I just sit down at the computer and whip it out. I can type out a
448      paper once the research is completed in two to four days of writing about five
449      hours a day.
450           The computer makes all aspects of writing easier. I especially love editing.
451      Being able to scroll up and down all of the pages, cut and past, delete, spell
452      check. I use the thesaurus on almost every sentence. I don't have a dictionary
453      on my computer, but I love Webster's seventh edition. I have four and they
454      are strategically placed in my house where they are readily accessible. I never
455      go anywhere with out a pen and tablet so that I can job down my thoughts
456      when they arise. I don't find using the computer an inconvenience. Because it
457      is so much faster to whip something out and editing it, the convenience of a
458      tablet is still slower. I rarely write much on a tablet unless I'm in the airport or
459      doctor's office. But when I get my lap top, I might not even then, but use the
460      lap top. My final product is virtually flawless (unlike emailing). Again,
461      education has helped, of course, but seeing my work right in front of me as I
462      think my thoughts and being able to editing things immediately has made my
463      finished product beautiful.
464           Q. Has the computer hurt your writing in any way (process, final product,
465      convenience, makes it harder)?
466           A. I can't say that the computer has hurt my writing in any way. I know
467      that Alice Walker and Neal Simon both hand write out their books/plays.
468      They claim that they are more viserally connected to the product, but I'm more
469      connected to my work on the computer. I have found that hand writing
470      inhibits my flow because it is so much slower. And the visual aspect of seeing
471      my writing typewritten in front of my eyes is easier to work with than scribbles
472      and cross outs etc.
473           Q. Do you like writing on the computer now? Would you go back to not
474      using the computer for writing if you could?
475           A. I'll never go back to the typewriter. I'm hooked on the computer.
476           Q. Do you think men and women use computers differently when it
477      comes to writing? If so, how so?
478           A. I think that men and women do most things differently depending on
479      how strong their feminine or masculine aspects of their psyche leads in their
480      expression and their right and left brain hemispheres of their brain. I haven't
481      talked to men writers. Many men have trouble with handwriting, both my
482      sons and my husband are scribblers. Typing has revolutionized my oldest son's
483      work life. My husband also prefers to type than write. Gracen does neither
484      presently. My left brain girl friend loves the computer, but struggles with
485      creating sentences in general, so it can take her four hours to write two
486      paragraphs, but she's a whiz on the computer. She just births her ideas more
487      slowly. I don't know if we use the computer differently for writing, my guess
488      is that we don't, but I could be mistaken.
489           Q. What has your experience with e-mail been like?

490       A. I absolutely love email. I get a couple of dozen a week and answer
491    them immediately. It's become part of my daily routine. As an introvert, I
492    don't particularly enjoy talking on the phone. Emailing has changed my
493    communication with everyone. I maintain regular contact with classmates who
494    live all over the US and Canada...Marie lives in Germany. My dearest friend is
495    in Florida. Emailing keeps us a finger touch away from one another.
496       Q. Does e-mail distance people from one another in some way(s)?
497       A. In some ways emailing does distance people in that it is an emotional
498    shield in conversation. There is not the same tone of voice as on a phone,
499    emotional inflexion. There is a tendency to hit and run on email. I've even
500    done it myself. I say things that I don't or wouldn't say face to face. I'm
501    presently in a six week long argument with one of my classmates that we
502    wouldn't have done in person. I'm braver and more succinct. I don't let
503    people get away with things that I let slide in person because of confrontation
504    and introversion. On the other hand, I have a dear friend that just wants me
505    to talk surface stuff on the computer, not personal, not too long, not to
506    emotional...that bugs me. She doesn't like seeing intimate things in print.
507       Q. Does it bring people closer in some way(s)?
508       A. It definitely brings people closer. My daughter, Tiffany, age 31, just
509    got her first computer. She learned quite a bit in high school and her two kids
510    (previously written about) are very good at it so it was time to get one. She is
511    now emailing me for the first time and it is transforming our relationship.
512    Neither of us like to talk on the phone so we go two or three months without
513    talking and then it's pretty brief and surface. She yawns while we talk and we
514    just aren't much on small talk. This is what her last email sounded like: Mom,
515    I totally agree with you about the getting together thing, just us girls and doing
516    something like a project or something!....I also think Sayde and I are ready to
517    move on to the next level of our relationship, if that makes sense? When she
518    said that comment to me in the bedroom about being ready to just be sisters,
519    it just clicked. I'm very excited, I feel like we are all on the verge of
520    something big happening in our lives. I feel real positive about something I
521    just don't know whqt it is yet, but I think it will be coming to me soon. Ever
522    since the conversation you and I had about your dissertation and stuff I have
523    felt like this and the feeling just keeps getting stronger. Pretty groovy huh? I
524    love you mom...."
525       This never happened to us before. Now our phone conversations are
526    deep and personal, and still occasional, but we email sometimes twice a day.
527    Somehow, she can put things into an email that she couldn't on the phone or
528    a letter. It's like a miracle. Her life is breaking wide open and e-mailing is like
529    the midwife, easing out the birth of her new self.
530       Q. Does e-mail help people communicate. How?
531       A. (No e-mail response--presumably answered in previous question.)
532       Q. Does it hurt communication? How?
533       A. Email can hurt if it becomes a substitute for personal involvement. If
534    my husband started to only write me on email, I'd stop it immediately. It's just

535 an example. My friend who doesn't want me to be personal etc., well,
536 emailing is a beginning. She isn't very intimate, extremely private, English
537 parents, and emailing is slowing drawing her out. I just need to take it slower.
538 I have another friend who doesn't even have her theraputic practice on
539 computer and types all of her papers after she writes them out. She has been
540 completely out of the circle of communication at school. We all are involved
541 and know things that are impossible to share with her. She doesn't research
542 on the computer either. But she's from Iowa originally, likes some things just
543 slow and the same as usual, even though she's lived in California for 25 years
544 and surfs all the time and goes to seminars at E-salon...she still has corn silk
545 in her ears!
546     Q. Describe a particularly successful or unsuccessful e-mail
547 communication experience you've had.
548     A. I answered this question.
549     Q. Do you think women and men use e-mail differently? If so, how so?
550     A. My experience is that the guys at school, my cousin the stock broker,
551 my friend the salesman, they all send those forward things...I told all of them
552 to take me off the list. When I did that, none of them write me personally.
553 They were all must sending out those chain things and jokes and email junk
554 mail....I don't even know where all of that stuff comes from. I rarely get that
555 stuff from my women friends, some, but rarely. I had to confront each of
556 those guys about writing me notes instead of just stop communicating
557 altogether. You know, they would tack on a small note to a forward thing.
558 Now my cousin is writing me wonderful letters, but other guys opted to quit
559 communicating. My husband hates all of that forward stuff...so it's not just
560 guys.
561     Q. Do women use e-mail differently with other women than with men? If
562 so, how so?
563     A. I'm finding that my women friends are becoming very intimate, like
564 my daughter Tiffany, in their e-mails. That's what made my one friend
565 uncomfortable. We write all kinds of girl stuff. I think that women have the
566 tendency to be more personal, relational. Even when our local mythmates
567 gather, the guys tend to focus on news, sports, work. We talk families, and
568 now have our mythic world to explore which is slow coming. We have
569 decided to meet less with the husbands because we have to learn to be
570 together first then help them fit into the way we will eventually learn to
571 communicate. So as far as emailing goes, I think that we are the way that we
572 are in general and even more so. It's like we are when we gather as women
573 without the guys, we're different. Men shift the mood, topics, etc. I use email
574 the same with both men and women, but more intimate with women. I'm as
575 intimate as the men are comfortable.
576     Q. What do you think of the Internet?
577     A. I love the internet, but have not done much exploring. Most of it
578 doesn't interest me, like going to the mall and shopping, or watching TV. I am
579 more quiet than that. I don't like to gather bunches of different data. But I

580 love accessing the things I need for research, libraries, journals, dissertations,
581 websites.
582     Q. Do you use the Internet? If so, how? Chat rooms? Research?
583 Shopping? News? What was that like?
584     A. I've never been to a chat room, shopping, news etc. I've only
585 researched stuff and I get lost quite often. But the more I do it the better I
586 get.
587     Q. Do you see the Internet as harmful or helpful? Why?
588     A. I haven't thought too much about it. It's helpful for me, like finding
589 books at Powell's Books, and it's such a wave of the future. Things change,
590 but won't it eliminate a lot of jobs, but then isn't that what "progess" does,
591 speed things up and replace human beings with machines....too much to think
592 about it, but I try to read something now and again to keep myself informed.
593     Q. Do you think men and women use the Internet differently? If so, how
594 so?
595     A. I know that my husband uses the internet daily for the weather,
596 researching product information, communications with the website of his
597 business, and a club that he chats with, Mended Hearts...from his heart attack.
598 It's a life link for him. He also plays games and I don't. My girlfriend is
599 addicted to some solitaire game. I have a guy friend who is addicted to a
600 bunch of games on the computer.
601     Final Question. Is there anything else you care to add about your
602 experience with computers or this interviewing process?
603     A. I loved being interviewed for this project because it forced me to think
604 about my involvement with the computer and evaluate it. I think that things
605 are more personality oriented/typed than gender based on the computer as far
606 as I see things but I have had such little exposure to users. But like I say, men
607 in general are taught to explore the unknown so they venture into cyberworld
608 with less trepidation than we women who are fradycats. But all that is
609 changing too. Isn't it?

# Appendix E: Elena

1    Q. So the first set of questions I'm going to ask you are just -- they're kind
2    of general in your relationship to technology. And then we'll get more specific
3    from there.
4    A. Okay.
5    Q. What images does the term "technology" bring to mind?
6    A. Steel, cold, foreign.
7    Q. Anything else?
8    A. (unintelligible)
9    Q. So not so much images, but concepts--
10   A. Yeah.
11   Q. For you? Okay. And do you consider yourself mechanically or
12   technologically inclined?
13   A. No.
14   Q. And why not?
15   A. Because I have never set my spirit to do it.
16   Q. Who and what have influenced your beliefs about this?
17   A. Society.
18   Q. So--
19   A. As I grew up -- I born in the early 50's, and television portrayed
20   women as not being -- having technological savvy. Where else did I get the
21   message? From -- people I would generally interact with -- technology
22   dealings was something that men dealt with.
23   Q. So just kind of in your day-to-day interactions with people at large?
24   A. Right. If someone was going to -- even -- we're talking mow the lawn
25   as far as technology, or fixing the cars or -- my dad was a chemistry teacher.
26   And that's where those images came from.
27   Q. So would you say your -- did your father influence this a lot? Was it
28   more just by example and the things he did, or did he say things to you?
29   A. No. My dad was real egalitarian. It wasn't Dad. It was -- my parents'
30   friends -- I'd go to their home. The things that boys did in general that girls
31   didn't do, what they played with or their toys. Yeah, their toys were more
32   machines. They -- like Tonka.
33   Q. Sure. Trucks and--
34   A. Trucks and -- yeah.
35   Q. So it sounds kind of like it was more sort of the environment you grew
36   up in and just the things you saw around you basically kind of said technology
37   is a guy thing?
38   A. Yeah.
39   Q. And what does the term "computer" mean to you?
40   A. It does -- computer has -- there's like this love-hate thing with the
41   computer. I love the computer for what I know how to do on it, which is
42   basically word processing and e-mail. It lets me type and correct and change

43  things around like I could never do on the typewriter.  And I love it for that.  I
44  love the e-mail that comes through, because I'm able to relate to people, bang,
45  just like that.  And typing.  But the other aspect of it is that I can't persuade it.
46  If it could just see me and hear me, I know it would do what I want it to do.
47  And so when someone says to me, well, what kind of computer do you have,
48  I'd say I have a beige computer, because I'm just totally intimidated by what I
49  don't know how to do on it.
50      Q.  So you love it for what you can do, and--
51      A.  I hate it for what I can't do.
52      Q.  Sort of the mystery aspect of it -- okay.  So we're kind of moving into a
53  different section of your early use of the computer.  So if you can kind of
54  remember your first experiences.  So what was your first experience with a
55  computer like -- can you remember that -- or even a newer one?
56      A.  Right.  I remember I went over to my girlfriend's house.  Her daughter
57  was in high school.  That was about seven years ago -- eight years
58  ago -- something like that -- when I was in junior college.  And I had to write a
59  paper.  And I didn't know what spell check was.  And I thought if I pushed
60  any button, something was going to go screwy.  And I was totally tense, and I
61  was totally afraid of the technology.  And I felt like a complete idiot.
62      Q.  And so when and how did you first learn how to use a computer?
63      A.  I'd say that I really first -- I can (unintelligible) the point that I really
64  began to be familiar and use the computer was when [female professor].
65  forced me to -- by the way, she instructed our gender and communication
66  class.  It was a closed circuit course of people in [place name, place name,] and
67  wherever.  And we had to have groups made up of people from all those areas.
68  And we had to use a search the net for concepts, which I'd never done.  And
69  we had to use e-mail, which I'd never done.
70      Q.  So that must have been quite an experience for you.
71      A.  I was freaked out.
72      Q.  Freaked out.  Also, who or what helped you figure out what you
73  needed to know to handle that?  Oh, well, actually first, even before that -- you
74  know, here you are.  You're freaked out with this class.  What kinds of
75  questions and concerns did you have?  Could you ever formulate those?
76      A.  My major concern was that I wasn't going to be competent enough.
77      Q.  At that time did you have any questions that you could even
78  formulate?
79      A.  I don't know how to do this.  How do I do this?
80      Q.  That's just the big question.
81      A.  I didn't know the procedures.  I didn't know how you got hooked up
82  to one of these servers.  I had to do that.  I didn't have the stuff coming into
83  my home.
84      Q.  You were kind of--
85      A.  I was a virgin.
86      Q.  Techno-virgin, huh?  And you're on your way to becoming a techno-
87  something else.  Okay.  So back to that next question, then, who or what

88  helped you find out what you needed to know, because you've obviously
89  mastered these things.  Or at least you can use them.  You use them all the
90  time now.
91       A.  My own tenacity.  That's the biggest thing.  Now Judy explained things
92  during class, and, you know, I had to ask people along the way.  But I can't
93  think of anyone who stuck out in my mind.  It didn't matter if it was male or
94  female.  If they looked competent and I needed help, I asked them.
95       Q.  So basically you just found someone who looked like they knew what
96  they were doing and said, hey, can you help me figure this out?
97       A.  Right.
98       Q.  And then who or what hurt your ability to find out what you needed to
99  know?  What stood in your way or who?
100      A.  My fear of looking foolish or incompetent.  Frustration.  I would
101 become so frustrated, I just wouldn't even deal with it.
102      Q.  So what would you do when you became frustrated?
103      A.  Swear at it and walk away.
104      Q.  The next time you realized, uh-oh, I've got to do this.  Right?
105      A.  Right.
106      Q.  What else that maybe wasn't there when you were learning this?  What
107 else might have helped you find out what you needed to know?  Is there
108 anything that would have helped?
109      A.  In the context that I was in at that time?
110      Q.  Yeah.  At that time.
111      A.  If I had had -- if there had been -- I'd had more girlfriends with
112 computers, they knew what was going on.
113      Q.  And then just, in general, I guess, what might have helped you learn?
114 Not even just in this context.  But what would have helped somebody learn to
115 use a computer?
116      A.  Sure.  A class would have helped me learn.  But I didn't have time for
117 classes at that point.
118      Q.  And kind of a wrap-up for this section.  What has been your best
119 experience with a computer, or what has been your worst experience with a
120 computer?  You can choose one, or you can answer both.  Think of what
121 stands out in your mind.
122      A.  I guess I'll preface it by saying as the most frustrating thing about the
123 computer is when my computer doesn't have the right kind of talk to talk to
124 another computer.  And I'm doing (unintelligible), that pisses me off, because
125 I don't know how to convert them!  As far as the worst experience, I'd say I've
126 typed a whole bunch of -- a term paper for Walker's class, did something, and
127 I deleted a whole bunch of -- it wasn't -- no, now, it wasn't saved, and I didn't
128 know how to go up and do the undo thing before I touch anything else at that
129 time.  That was a bitch.
130      Q.  And how did you feel?
131      A.  I was angry.  And there's nothing I could do, and I was just angry.

132    Q. So moving on, those were your early experiences. Now I want to talk
133    a little bit of current use of and relationship with computers. So have your
134    thoughts and feelings about computers changed from, like, your earliest
135    experiences to your present?
136    A. Yes.
137    Q. And, if so, how?
138    A. Yeah. It's -- my comfort level is up, and my confidence level is up.
139    But I still classify myself as a computer dork.
140    Q. Well, who or what has influenced this -- the change part of it?
141    A. I've done it for myself -- just the continual use of it. People that I
142    worked with have -- that I work with every day, like, at Lane, know this is how
143    you do it. And then I feel safe enough to go back and ask them the third or
144    fourth time, "I'm sorry. I just can't -- what do I do now?" And then they
145    show me again.
146    Q. It sounds like you've kind of a built a community of people you can
147    trust around this technology, and so it's okay to keep asking?
148    A. It's because they need to go slow, and that's why it's frustrating to me,
149    Ronda, because I get stuff real quick, and I processed it really quick. But on
150    the computer I need to go slow, and so I have to find people I feel safe with
151    that know that that's okay, and let me know that that's okay.
152    Q. Right. And they're not going to question you8r whole intelligence just
153    because this particular thing--
154    A. Right.
155    Q. You can't relate to. So, yeah. I can see where that would be real
156    important. So how and where do you use the computer, or how -- yeah. How
157    and where do you use it altogether, and then where do you use it the most?
158    And what do you use it for?
159    A. I use the computer at my home the most. I type my college
160    assignments. Basically, it's just word processing composition. I use the
161    computer at school. I do e-mail. I do Internet searches of the library. That's
162    how and where I use the computer.
163    Q. So home is where you do your writing, and school you can do
164    research, and you've got e-mail access. So I take it you don't have e-mail
165    access at home right now?
166    A. Right. I will next term, but I don't now.
167    Q. Does your computer -- well, first, where do you keep your home
168    computer?
169    A. It's in an extra bedroom that I have set up for my study area.
170    Q. Does your computer have a name?
171    A. Yes. And I'm glad you asked that. Now, wait a minute. I bought this
172    computer from this little dope head. It's a laptop. The computer's name is
173    Wonky. W-O-N-K-Y. But I'm changing it's name to Aphrodite.
174    Q. Hey, Aphrodite. Okay. So can you tell me a little bit about where the
175    name Wonky came from, and then what's with the change to Aphrodite?

176     A. I am so glad you asked me this. I've been thinking about this. I think
177 Wonky is some code name for dope that Joe used. I don't know.
178     Q. So that was the name it had when you acquired it?
179     A. Right. Right.
180     Q. You never gave it that name?
181     A. No. The name was on the screen saver, you know. Wonky would fly
182 around through -- and I just thought, this probably means, you know, doing it
183 or something. I don't know. It's probably (unintelligible). But with my
184 course in classical rhetoric and the discussion of the noble and the evil lover
185 and platonic dialogues, and the man who I am discerning as this noble lover is
186 this total computer genius that I'm going out with now. I -- and he's the one
187 that cleaned all the little dope guy stuff off this lap top for me. I think it's only
188 appropriate that the computer be renamed Aphrodite, because it was the
189 computer that actually brought me together with this wonderful guy who's a
190 total computer genius.
191     Q. Well, there you go. So how did the computer bring you together with
192 him?
193     A. Because I got the computer from the dopehead, and Jim was the
194 one -- that's the man who I went to and said, "I don't know what I'm looking
195 for on this computer, and he wants to sell it to me. Is this price okay? What
196 should I look for?" And he gave me a list of all the stuff I should. I brought it
197 back to him, and showed him that. And then after I got the computer and
198 started school, I had all this junk on this computer of Joe's I couldn't get off. I
199 didn't know how to delete any of that shit. And so I called Jim who had given
200 me his home phone number, and he came out, and he got my computer all
201 fixed up for me and everything. And then we started going out. So that's how
202 it worked.
203     Q. So I think there might be another reason why you view computers
204 differently than you did. This is great. This is the best story I've heard yet.
205 This is so good. Cool. So do you talk to the computer?
206     A. Yes.
207     Q. Can you tell me how you talk to it, the kinds of things you say?
208     A. Yes, I do. I may talk to the computer in a different way. Mine has a
209 feminine gender after I renamed it from Wonky. But I try to -- "come on,
210 baby. Come on, baby" -- to get it to do what I want. And then my famous
211 lines are, "You piece of shit." You know, I say that almost daily. "You piece
212 of shit." So, "Come on, baby, " is like I'm kind of trying to schmooze to
213 do -- "be nine, come on, momma loves you, give me what I want." And then
214 I just get pissed -- "you piece of f-ing shit."
215     Q. When it fails to deliver?
216     A. Right.
217     Q. So this is how you talk to Wonky. How recent was the name change?
218     A. I am going to -- I've just in a last couple days decided to change the
219 name. So it hasn't had its trans-gender thing happen yet.

220       Q. So we might have to have a follow-up to see how things are in a week
221 or two. I'm serious. We might want to do that and see what's changed. This
222 whole trans-gender thing could be important.
223       A. You know, it could.
224       Q. It could be very important. So very interesting. I've got my questions
225 out of order. Here's one for you. Do you have a favorite joke about
226 computers or computer users? You know, there are some jokes that go
227 around. Do you know any?
228       A. No.
229       Q. And how would you feel if you no longer had access to a computer?
230       A. Crippled.
231       Q. What would you miss the most about it? You're thinking like in terms
232 of doing assignments and just--
233       A. Well, I can type fast on it. I can edit fast on it, and I can print it out
234 fast and saying, "There it is."
235       Q. No white-out required. Okay. And what would you miss the least
236 about computers if you didn't have one?
237       A. The imposition I feel that technology puts -- intrusion that technology
238 has in our lives.
239       Q. Can you say anything more about that, how a computer specifically
240 intrudes?
241       A. It takes away time from my daughter -- it's right front forward in my
242 head. Trying to do school, work on the computer, and be a mom -- I
243 guess associate that with computer -- is my schooling.
244       Q. So part was the computer because you associate it with that, and partly
245 it's just school requires you to -- yeah. So it kind of sound like maybe you're
246 saying the computer is sort of this isolating -- it sorts of isolates you while
247 you're using it, anyway? Is that anywhere near the mark?
248       A. It takes my time away from things that I'd rather be doing.
249       Q. Okay. I think I'm getting an idea. So these last few questions before
250 we flip over the tape are related to computers, gender, personality-type. So
251 this might be interesting. Do you think men and women use computers
252 differently?
253       A. I think that the computer requires you to use it the same way as
254 everyone else. I think their orientation and their attitudes and their intent is
255 different. Or what they see the computer is allowing them access to
256 production or--
257       Q. So you think men view the computer differently, but that everyone has
258 to use it kind of the same way?
259       A. Right. I mean we all sit. We use the mouse. We use the keyboard.
260 We use it that way the same, and that's the stumbling block for some people, is
261 just the actual use of this technology.
262       Q. Judge kind of mechanics--
263       A. Right. That's right.

264       Q. It sounds like. I guess maybe I'm thinking about do you think they use
265   it differently, like they have maybe different purposes?
266       A. Oh, I see. Yeah.
267       Q. Well, this -- what you said was part of it, too. But maybe--
268       A. Oh, I'm sure that men use the computer for power over, and women
269   use them for relational (unintelligible). I think women use computers because
270   they know that that's a source of power for them. If they don't, they'll even
271   have less power than they already have.
272       Q. It sounds almost like women feel, like, well, I have to use this if I want
273   to--
274       A. Yeah.
275       Q. Even have a voice.
276       A. Or have a chance to get ahead.
277       Q. So it sounds almost like it's not embracing the power, but saying, well,
278   it's there. If I don't use it, then I lose out, kind of thing? Or do you feel
279   like -- okay.
280       A. Yeah.
281       Q. And men seem to just see it as -- how do you think men see it again?
282       A. I think men -- I think the whole -- I think computers were created in a
283   masculine context by men, and that the way that the processes on the
284   computer take place were initially from that aspect -- that perspective. As
285   such, I think that it is an environment communicative-wise, that women who
286   don't have the experiences step into it, find themselves in a masculine
287   environment.
288       Q. So kind of following on with that, then, does one sex or gender enjoy
289   computers more than others?
290       A. I don't know if you're talking about the magnitude here, because if
291   we're looking at magnitude of numbers, I'd say that men probably do more
292   than women, just because they probably utilize them more. It depends on
293   what it's being used for.
294       Q. So that makes sense. So you're suggesting whether they enjoy it more
295   is maybe too broad of a question.
296       A. Right.
297       Q. It kind of needs a context--
298       A. Right. It does.
299       Q. To be able to answer it?
300       A. Yeah.
301       Q. That's fair. So maybe we can address that more when we get to some
302   of the other sections, the specific tools. Okay. Here's a question. Do you
303   think of computers as he, she, or it, and why? Feel free to relate this back to
304   your own computer.
305       A. It. Why? I can't persuade it. Certainly, if it was masculine or
306   feminine, I could persuade it.
307       Q. And yet you have a gender for your computer.

308     A. Well, putting it as female gender, because then I -- I'll have some sort
309     of -- and the Aphrodite is the goddess of love -- a powerful goddess. And so
310     I'm thinking -- I'm hoping I'll feel some sort of affinity to this piece of shit
311     computer by making her, creating her to be a powerful goddess.
312     Q. Well, names are a powerful thing. Right? And so it sounds like what
313     you're getting at is you want to see if changing the name can change the
314     relationship with the machine. It sounds like--
315     A. Well, I hadn't really thought about that like you're putting it, Ronda.
316     But I think you're right.
317     Q. Oops. Put words in your mouth. Oops. Bad interviewing skills.
318     A. No. I mean just personally -- I just wanted it to be feminine.
319     Q. So thinking more about gender and maybe even beyond gender to sort
320     of personality type, are computers -- and this might be software programs,
321     too -- but just kind of the whole package. Are they inherently designed to be
322     more user friendly for people who think a certain way? And you kind of
323     touched on this earlier. But I'll ask it again. So certain mind-sets -- do
324     they -- are computers designed to be easier for certain mind-sets to use? Like,
325     there's the linear/non-linear decision.
326     A. I'll tell you what. I -- visual people do better. Now, I took this test on
327     the computer, whether I was a visual or an auditory learner. And I -- I'm an
328     auditory person. And I'll tell you nothing frustrates me more than formatting,
329     than making the images be where they need to be, spatial stuff -- that's way
330     hard for me to do on a computer. Concepts that I create with little symbols is
331     very easy for me to do. I think it's more your learning style and your way of
332     how we process information differently as human beings, is more critical than
333     a gender issue. Again, if we're socialized into believing that certain areas
334     are -- we're not good in, then does that set us up (unintelligible). I don't have
335     a clear answer.
336     Q. So it's like gender might be part of it, might partly be personality type,
337     aside from that?
338     A. Yeah. It's hard--
339     Q. It sounds like it's hard to pin it down.
340     A. To pull one variable out. I think it's a combination. It's
341     complex -- complex.
342     Q. So you would agree, though, it sounds like that they are designed for a
343     certain mind-set and a certain type of person, or it seems so?
344     A. I -- I would -- I would this it -- they are. If they were designed by men
345     and the way that tasks were carried out and the tasks that they were designed
346     for were in a particular area, then I'd say yeah. What would computers look
347     like or be like or how would they function, even though they work on a binary
348     system, if women did that? I don't know.
349     Q. It would be interesting to see, because now we are getting more
350     women in the field, or presumably we are. So maybe if we get more women,
351     things will change. It will be interesting to see. So thinking about the way
352     computers are designed, and you've kind of answered this. But has the design,

353  such as it is, made it easier or harder for you to learn to use a computer? It's
354  set up for somebody like you?
355      A. Yeah, it is, because I like organization. I like things classified to where
356  I can systematically go through them. That's why I said initially I don't know
357  how to do it because I haven't taken the type and set my spirit to do it.
358      Q. You haven't taken the time, but ultimately you're seeing it as
359  something that really is your kind of thing?
360      A. I could do it. Yeah, I could do it. You mean would I be one of those
361  people that's totally involved with it? No. But if I could program it to cook
362  my meals, it would be fine.
363      Q. For specific tools and uses, we're going to start out with writing. It
364  sounds like you do a fair amount of writing on a regular basis for school or
365  work.
366      A. Yes.
367      Q. So just describe a little bit about the kinds of writing that you do.
368      A. I do academic composition. I type text, and I enter footnotes, cite
369  sources, I should say, and I write bibs. And that's what I do. I don't have to
370  make, really, graphs -- anything like that.
371      Q. So pretty much a text-based deal. All right. So at what stage of the
372  writing process do you start using the computer?
373      A. That's a good point. I like to do my rough drafts with pen and pad,
374  and once I have my outline done, then I take my outline, put it down next to
375  me, and type. And that's an effective way for me to compose.
376      Q. So just out of curiosity, because I'm also interested in writing -- so
377  what constitutes a rough draft for you? Is that something you do kind of in
378  paragraph format and then turn it into an outline? Or do you start out by
379  outlining?
380      A. I start out by outlining.
381      Q. So you get that organization down from the beginning?
382      A. Right. And I like it because it's tactile. I can feel the paper. I can feel
383  the pen. I feel real connected with it. When I move to the connected, I don't
384  feel as connected with it. But I'm able to just bang it out.
385      Q. Makes me sort of wonder if that sort of less connected feeling the
386  computer maybe gives you the objectivity or something--
387      A. That's--
388      Q. That just--
389      A. Yeah, that-
390      Q. Maybe speeds it along?
391      A. Objectivity. No, it's not that, Ronda. It's that I am able to type so
392  rapidly that my thought process while I look at these fragmented sentences
393  and the outline, I'm able to translate into complete sentences within a
394  structured context quite rapidly.
395      Q. Oh, wow. That's great. Yeah. Kind of complete your thoughts while
396  you're typing. So has the computer helped your writing in any way, either the
397  process or maybe the final product? Does it make it easier, harder -- anything?

398     A. Yeah. It makes it easier because I can produce things more quickly
399    which gives me more time to edit. Editing is easier. The source and the spell
400    check -- I now have access to pick different words, and I spell horribly. So
401    spell check speeds me along.
402     Q. It sounds like this has kind of speeded up the whole process.
403     A. Yes. That's why I said I'd feel crippled if I didn't have it.
404     Q. And has the computer hurt your writing classes in any way? Is there
405    anything that -- negatively?
406     A. No.
407     Q. Well, I think I know the answer to this one. So would you willingly go
408    back to not using the computer?
409     A. No.
410     Q. No way. And do you think men and women use computers differently
411    when it comes to writing? So in your case let's say academic writing.
412     A. I don't know. I don't know.
413     Q. Fair enough. What about e-mail? Just kind of generally what has your
414    experience with e-mail been like?
415     A. Great. E-mail allows me to have interpersonal connection that has not
416    been possible. I can maintain links. And e-mail allows me to review the
417    content of what I've written and edit it to elicit the -- more better the response
418    I'm looking for by the way my communication's been constructed. Because of
419    that, e-mail has helped me to be able to express myself in ways to people who
420    I'm close to that I would not have known like that.
421     Q. Do you think that's partly because it's not face to face?
422     A. That's partly because it's not face to face. It's partly because it
423    is -- it -- interpersonal communication is not face to face. It is able to happen
424    very rapidly, and that I have the opportunity to edit. And if I want to evoke
425    particular emotion in there, I have to draw on all of my persuasive knowledge
426    and skills to use metaphor, to use vivid language, to use logic. And I construct
427    the document, and I e-mail it. And that's why I'm a better writer.
428     Q. Gives you lots of practice using your skills. Well, I was just thinking it
429    sounds like this is a combination of immediacy with time to think that's really
430    powerful.
431     A. Right.
432     Q. Interesting. Does e-mail -- do you think e-mail can distance people
433    from one another in any way?
434     A. I haven't found that to be true.
435     Q. Well, that's what counts, is your experience. So then does it bring
436    people closer?
437     A. Yeah. You're able to send e-mail any time of the day or night. And
438    you can transfer your thoughts and feelings and emotions (unintelligible).
439     Q. Well, my next questions are about communication, and I think you
440    pretty much answered those. Does e-mail help people communicate, and, if
441    so, how? You've talked about that a little bit.

442        A. From my subjective perspective, it does. It gives me the immediacy
443     with them, the accessibility to them, immediacy -- a format in which I can
444     examine and edit my own thinking to make it do what I want it to do more
445     completely. A little more control over the situation, almost. A writing
446     process. Right.
447         Q. Gotta be careful about things like -- statements like that. Can you
448     describe a particularly successful or an unsuccessful one -- but a particularly
449     successful e-mail communication experience that you've had? Is there a
450     specific one that you care to talk about?
451         A. None that I care to talk about.
452         Q. Well, here's another one -- that gender thing coming up. Do you think
453     women and men use e-mail differently?
454         A. Yes. I think you'll find women's e-mail more demonstrative.
455     Attempts to further -- further the community of dialogue to support -- support
456     and develop their relationship. And generally men's e-mail tends to be either
457     just the regular way men are categorized as communicating, as competitive
458     (unintelligible). And (unintelligible) chat rooms are like this wonderful
459     environment for them to display all of their disgusting testosterone.
460     And -- but on the other hand, the anonymity that e-mail gives men affords
461     them an opportunity to express themselves in ways that they would be more
462     reluctant to do face to face. I know that is applicable for women and men
463     across the board. But maybe it offers me a little more safer place to do that.
464         Q. So e-mail and chat rooms are kind of both that way. Do you see e-
465     mail as kind of offering the same kind of anonymity? Or is that just chat
466     rooms?
467         A. No. I meant -- I meant by -- I guess anonymity wasn't right. It's just
468     not face to face, and so people might have a tendency to say -- reveal parts of
469     themselves. But on the whole, I think that men communicate the way they
470     communicate the same as face to face using the computer, and it's likewise for
471     women.
472         Q. And do women use e-mail different with other women than they do
473     with men?
474         A. Depends on the man. Depends on the woman.
475         Q. And their relationship?
476         A. And the relationship, yeah.
477         Q. Fair enough. Last, but not least, the Internet. So, just generally, what
478     do you think of the Internet?
479         A. I don't understand the Internet. I'm confounded by the complexity of
480     it. I cannot in my mind visualize these hovering, quivering little nodes of
481     electric impulses that carry my thoughts that are stationed out someplace on
482     some pad waiting to access my home. I don't understand that. That the ability
483     to be able to access information is good, and yet I'm totally overwhelmed by
484     how I do it. I know that there's search engines. I don't understand how it
485     works. I'm baffled by that. How does it know to go get information? How
486     does that work? And I get -- I don't understand it, but it serves me well, as

487    long as I stay within these little parameters of what I know to do on it. I

488    always make a bookmark, because I don't know where the hell I wind up. So I

489    think the Internet is evil Satan.

490        Q. How so?

491        A. I think it's Big Brother. I think it's George Orwell. But that's pretty

492    much a classist statement because there's so many people in our country that

493    can't afford a computer just for -- to make a classist statement that, you know,

494    it's gonna take over our whole lives. They can't even afford their regular daily

495    living, you know, and can hope to have a computer.

496        Q. And then how does that affect them in not having one doesn't

497    necessarily mean they aren't affecting you.

498        A. Right.

499        Q. Right.

500        A. Yeah. That's definitely a whole big issue.

501        Q. So how do you use the Internet?

502        A. I go to the library.

503        Q. Go to the library.

504        A. And cruise the library -- go on the Internet because that's how I picked

505    that up.

506        Q. Like, the library home pages and--

507        A. That's it. I feel most comfortable doing that. But I'll be damned if I

508    know. I haven't really searched the web much at all, to be really honest with

509    you. I couldn't when I had the Internet before because it was expensive to be

510    on line and try and find things.

511        Q. So you used to have access other than at school at one point?

512        A. Yeah. I used to have -- I had it at home. But that was only during

513    Judy Bowker's class, and over the (unintelligible).

514        Q. So it sounds like you pretty much stuck to the academic stuff and

515    what's available at school. All right. So pretty much research. Not so much

516    shopping or the news or--

517        A. No.

518        Q. Chat rooms?

519        A. I do research. That's what I do. That's it.

520        Q. Well, you had spoken about men talking -- or men's interactions in

521    chat rooms. Is that from stuff you've heard about, or--

522        A. No.

523        Q. Have you experienced that?

524        A. I had -- I did -- I mean that changed my opinion about the computer

525    when I initially got it, because here was interaction with people. And being a

526    com major and taking gender com course, I was well -- men would flame, I

527    would just flame back. I thought it was funny. Stupid asses. I guess my brief

528    experience with that let me see -- or made me feel that it really was a masculine

529    environment. It was itself overwhelmed. Women sent me one of those little

530    mails where you're in a chat room that they can send you special little

531    messages.

532    Q. Like a private message or some--

533    A. Yeah. She was just like flipped and didn't know what to do.

534    Q. About the way a man was--

535    A. Right.

536    Q. The way--

537    A. Not her. But generally she didn't know what to do. She didn't know

538 how to approach it.

539    Q. Just overall what do I do--

540    A. Right.

541    Q. In a place like--

542    A. Right.

543    Q. And so it sounds like she felt safer--

544    A. Right.

545    Q. Turning to a woman?

546    A. Because I told her and told her what she could expect on there, how

547 she had to position herself, and if she was going to be involved with that sort

548 of stuff.

549    Q. What kind of advice did you give her?

550    A. I -- basically I warned her that this is the way that a lot of personalities

551 would come off. She needed to be skeptical, and that she needed to put

552 herself out there and not be afraid, be confident. And at least the image that

553 she was going to portray, construct around herself and (unintelligible).

554    Q. Sounds like not too bad advice in any communication environment.

555 So that's a little kind of generally about the Internet. So do you see the

556 Internet as primary harmful or helpful, or is it a little of both?

557    A. Probably a little of both.

558    Q. And how harmful -- what ways would be harmful?

559    A. Frightening to me not to have some piece of paper here I can hold in

560 my hand, and that the source of it is someplace else that -- what happens

561 if -- it's been reassuring to me to go to a shelf in the library and pull a book off

562 the shelf. Yeah. And that's what's frightening to me. Also, you know, they

563 (unintelligible) sources. Punch in and let's see what they are putting out there.

564 And I'm not talking about pornography, really. I'm talking about information

565 that is panned off as being the truth or the expert testimony. And it's not. I

566 know that can happen in any context, but it seems to slide easier on that. But

567 the good thing is there is a lot of good information. It is easy to access. I can

568 sit and -- when I get in my home in my jammies and drink coffee and smoke a

569 cigarette and be on the computer, and no one can tell me to quit drinking and

570 smoking and working at my computer.

571    Q. And here is maybe a predictable question. But do you think that men

572 and women use the Internet differently? And if so, how so?

573    A. I think probably because the majority of the pornography is typically

574 the exploitation of women, that men will use that more. If they have access to

575 it, then it reaffirms their -- I think it's an easy way for men to get off. And

576 they might be afraid to go down and buy something from the store -- a

577 magazine or adult bookstores. But, golly, gee, Sandy, I can just pull it up on
578 my computer.
579     Q. You don't have to leave your own home?
580     A. No. I don't know what -- I don't know what women use the Internet
581 for. I mean I--
582     Q. Well, research. Right?
583     A. I guess -- yeah, when I do research and -- I really -- I really don't know.
584 My life is so restricted to research, I don't -- I -- what would I do? I don't
585 know. I don't know. You know, shopping, chat rooms -- all that stuff. Who
586 knows? If you have time and the access, but--
587     Q. We've completed the questions. And I'll just ask is there anything at all
588 you want to add about computers, technology, gender,
589 communication -- anything?
590     A. I wonder if it'll be to the -- women will become to the computer -- I
591 guess maybe we see this in terminals in offices now. But it just replaced the
592 typewriter. When the telephone or even the typewriter were invented, it was
593 part of the male domain because it was thought that women weren't smart
594 enough to do it. The technology was too out there for women. But when
595 women were able to do it and men saw that they could, they relegated it to a
596 feminine arena and devalued it. So women typed. They were the steno pool.
597 Women were the operators. Women yak on the phone. And I wonder if that
598 will happen with computers, as well.
599     Q. That's an interesting thought. Women used to be programmers back
600 when programming meant something else. And that became sort of a male
601 thing. But it almost seems like there are certain feminized occupations with
602 computers -- data entry and--
603     A. And if they are, they're devalued. Women are paid less in association
604 with the computer.
605     Q. Or you're kind of wondering even with some of the perceived higher
606 level skills, it's like once women do that--
607     A. Right.
608     Q. What's going to happen?
609     A. Once women do that, then it will be devalued. That's my--
610     Q. That's your conviction?
611     A. My opinion. Yeah.
612     Q. Well, I guess we'll see.

# Appendix F: Base Question List

## Self/Relationship to Technology

1. What image(s) does the term "technology" bring to mind?
2. Do you consider yourself mechanically or technologically inclined? Why or why not?
3. Who and what has influenced your beliefs about this?
4. What does the term "computer" mean to you?

## Early Use

5. What your first experience with a computer like?
6. When/how did you first really learn to use a computer? What questions and/or concerns did you have?
7. Who/what helped you find out what you needed to know?
8. Who/what hurt your ability to find out what you needed to know?
9. What else would have helped you find out what you needed to know?
10. What has been your best/worst experience with a computer?

## Current use of/relationship with computers

11. Have your thoughts/feelings about computers changed from early experiences to present? How? Who/what has influenced this change?
12. How and where do you use the computer/what primarily do you use it for (work, home, work-at-home)?
13. Does your computer have a name?
14. Do you talk to the computer? Describe how you talk to it (what you say, how you say it).
15. Do you have a favorite joke about computers/users?
16. Where do you keep your home computer? Why?
17. How would you feel if you no longer had access to a computer? Would you miss anything? What would you miss the most? What would you not miss at all?

## Computers and Gender/Personality Type

18. Do you think men and women use computers differently? If so, how so? If not, why not?
19. Does one sex/gender enjoy computers more than others?
20. Do you think of computers as "he," "she," or "it"? Why?
21. Are computers/software programs inherently designed to be more user-friendly for people who think in a certain way (e.g., linear versus non-linear, male versus female, programmer/software designer versus user)?
22. If so, does this design made it easier or harder for you to use the computer?

## Specific Tools/Uses

### Writing

23. Do you do any kind of writing on a regular basis?
24. What kind(s) if writing do you do?
25. Do you use the computer when you write?
26. If so, at what stage of the writing process do you use it (prewriting, first draft, final draft)?
27. Has the computer helped your writing in any way (process, final product, convenience, makes it easier)?
28. Has the computer hurt your writing in any way (process, final product, convenience, makes it harder)?
29. Do you like writing on the computer now? Would you go back to not using the computer for writing if you could?
30. Do you think men and women use computers differently when it comes to writing? If so, how so?

### E-mail

31. What has your experience with e-mail been like?
32. Does e-mail distance people from one another in some way(s)?
33. Does it bring people closer in some way(s)?
34. Does e-mail help people communicate? How?
35. Does it hurt communication? How?

36. Describe a particularly successful or unsuccessful e-mail communication experience you've had.

37. Do you think women and men use e-mail differently? If so, how so?

38. Do women use e-mail differently with other women than with men? If so, how so?


## Internet

39. What do you think of the Internet?

40. Do you use the Internet? If so, how? Chat rooms? Research? Shopping? News? What was that like?

41. Do you see the Internet as harmful or helpful? Why?

42. Do you think men and women use the Internet differently? If so, how so?