

Extreme Usability and Technical Communication

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In the past twenty years, usability has become a more important part of the development of technological systems and technical communication, as evident from its increased role in the design of computers and other electronics, or recent issues of *Technical Communication Quarterly*. For the most part, this growth has been positive, one of the reasons for the current strength of user-centered methods of developing technology and communication. However, as usability has matured, the rise of a particular kind of usability which I call “extreme usability” has displaced original, more complex formulations. Practitioners of extreme usability repeatedly invoke ease and “making it easy” in their definitions of usability. This is no accident: extreme usability is in fact usability made easy, a simplified usability profoundly and problematically distinct from the robust, more carefully developed concepts of usability from which it was derived.

Bernadette Longo has argued that a cultural studies approach to studying technical communication can make writing visible for study, demonstrating how the theories and practices which shape writing are articulated. In the case of extreme usability, this is especially important, since one of its principle operations is limiting the visibility of technology and technological institutions, encouraging the belief that technology is autonomous, practically or empirically beyond our capability and control. Studying the cultural and historical context of extreme usability illuminates its transfer of the transactional, consumerist logic of ease to usability, and the resultant weakening of end-user agency. Like Longo and other cultural studies theorists, I believe that technical communication scholarship must consider these issues—after all, as Robert Johnson points out in *User-Centered Technology*, addressing the inequitable distributions of power built into most technology and communication is much of the

motivation for the user-centered methodologies usability was originally intended to support. In contrast, extreme concepts of usability facilitate a “best practices” approach to usability, in which user engagement is limited, considering the wider scope of culture is irrelevant, and the ends of usability all but limited to expediency.

Therefore, in this essay, I investigate the bond of ease and extreme usability from a cultural studies perspective, considering the ways the ideology of ease affects definitions of usability, methodologies for measuring usability, and the many kinds of readers and writers involved in these processes. I begin by explaining how extreme usability is derived from more robust concepts of usability. I outline the history of ease, focusing on its growth into a powerful ideology which shapes American’s understanding of technologies from writing to consumer goods to computers. Calling on contemporary textbooks, web design books, and other sources, I then demonstrate how extreme usability—as a supposedly measurable quality, and as a methodology—reproduces the ideology of ease, consistently undermining user-centered approaches to usability. I conclude by focusing on the role of extreme usability in technical communication, arguing that by mobilizing fully developed concepts of usability, technical communication educators can prevent the considerable problems which can occur when usability is reduced to extreme usability.

The Definition of Usability and Extreme Usability

Extreme usability has arisen in part as a response to the complexity of influential definitions of usability. For example, in *Usability Engineering*, Jakob Nielsen defines usability as five interconnected parts: learnability, or being “easy to learn”; efficiency of use; memorability, or “an interface that is easy to remember”; few and noncatastrophic errors; and subjective satisfaction, or pleasure in use (Nielsen 1993 26-33). Additionally, variations in definition

persist despite repeated calls for consensus and stability, such as the codification of usability in ISO standard 9241 (Dillon 14). The ends of usability differ, too; the concept can describe a desired result of the development of technological systems and practices, a method for shaping user interfaces for machinery and software, or a philosophy for evaluating user needs (Quisenberry 82).ⁱ Finally, high-tech fields like computer programming, information architecture, interface design, and consumer electronics continue to experience rapid growth, continually moving the target of usability. Extreme usability confronts this complexity and variation of definition, multiplicity of purpose, and rapid change by creating a more easily attained concept of usability.

Extreme implementations of usability often streamline its complexity by using a given definition as a point of departure, but privileging one component over the others. For example, the concept of “user-friendly” design, considered by some an analog to usability, weighs user satisfaction and error recovery heavily (*Apple Human Interface Guidelines*). Barbara Mirel argues this pattern is common not only in theory, but in practice, and calls for the more integrated approach of concepts of usability like the above-quoted Nielsen’s:

Usability [. . .] involves multiple dimensions [. . .]. All are intricately intertwined. None is independent of the others.

Yet, in many development contexts, a comprehensive vision of interrelated usability dimensions gets broken apart. Each dimension—ease and efficiency of use, learnability, enjoyment, and usefulness—becomes a separate objective. Design and development teams choose to build for some dimensions while neglecting others based on project deadlines, resources, and other constraints (168).

The simplifications Mirel criticizes likely provide a more measurable, teachable, attainable usability. But a concept of usability built on one part of a multivalent definition cannot make best use of various accompanying methodologies (such as rapid prototyping, focus groups, heuristic evaluation, or formal usability testing) which together rely on the more complete

theoretical foundation. And as Mirel shows, these condensations of usability are often mere expedients applied to move projects forward, not approaches engaged because of past effectiveness or demonstrated benefits.

Whitney Quisenberry argues that much of the oversimplification of usability focuses on privileging ease of use and ease of learning, which are quite prominent in many definitions of usability (88-9). Focus on ease is, in a nutshell, the heart of extreme usability. Ease figures heavily in Nielsen's five-part definition, as well as the definition of usability with which Deborah Mayhew introduces the textbook *The Usability Engineering Lifecycle*:

Usability is a measurable characteristic of a product user interface that is present to a greater or lesser degree. One broad dimension of usability is how *easy to learn* the user interface is for novice and casual users. Another is how *easy to use* (efficient, flexible, powerful) the user interface is for frequent and proficient users, after they have mastered the initial learning of the interface. (1, emphasis in original)

Mayhew's definition focuses on the role of ease in surface-level features (user interfaces). Similarly, Karen Donoghue sees extreme usability as "an experience that *makes it easy* to complete goals and accomplish tasks with a minimum of friction" (5, my emphasis). For Informatica's PowerAnalyzer, extreme usability is achieved with a single "zero-client" interface which enables "minimal training and rapid, mass deployment," using natural language and "familiar paradigms." In these and many other contexts, the concept of usability is reduced to various forms of making technologies and tasks easy, and achieving usability itself is likewise portrayed as easy. Though the examples I provide here focus on computing (user interfaces), ease has been associated with technology since the seventeenth century, when a strong bond between ease and writing was first forged. I would like to review of the history of ease in American consumer culture, especially the development of ease into a powerful ideology, to show how the emergence of extreme usability continues the ease-technology connection.

Historicizing Ease, Usability, and Extreme Usability

The appearance of usability is traceable to the disciplines of ergonomics and human factors engineering, which emerged during and immediately after World War Two, in response to the need to make complex military equipment less difficult to operate (Barnum xiii). But a concept of usability in which ease is foundational has roots in consumer culture. In the first part of the twentieth century, marketing of new mass-produced consumer products promised to deliver ease by reducing the amount of labor necessary to complete a task. However, consumer products were not easy to operate by current standards, and were rarely marketed as such. For example, while early electric washing machines made laundry less time-consuming and back-breaking than using the washboard, tub, and wringer, their operation required manipulation of a sophisticated set of controls. Washing, rinsing, and wringing out clothes sometimes required reconfiguring equipment with tools or complicated pulleys and levers—and exposed machinery often caused horrific injuries (Maxwell). While there were exceptions, like Kodak cameras, marketed with the slogan “You push the button, we do the rest,” for the most part, the attitude toward contemporary technological products was highly pragmatic. As long as products enabled work, increased the amount of work possible in a given time, or made work less demanding, they were acceptable, even with massive difficulty and complexity. This attitude was reflected in the work of contemporary writers like Christine Frederick, whose *Household Engineering* proposed adopting Taylorist methodologies to the home, and prefigured the language of usability by calling for better designed home workspaces which enabled “*comfort in use.*” Importantly, Frederick was also a huge proponent of consumption: she encouraged American homemakers to alleviate their overwhelming amount and difficulty of

housework by purchasing new machines—bread mixers, vacuum cleaners, fireless cookers, and electric mixers.

Consumer products gained what might be called “usability” only gradually, as the cultural power of ease grew and its role in product design and marketing increased. While lessons learned in the new disciplines of human factors undoubtedly had some effect in civilian spheres, consumer products changed on their own as well. Beginning a process that would span the next fifty years, from about 1925 to 1975, direct manipulation or electric controls—like the Edsel’s push-button transmission—gradually replaced arrays of levers, valves, and switches. As more automatic or “computerized” products appeared, marketing emphasized not only labor-saving properties, but ease of use—even the “life of ease” represented by the American dream. The reasoning was pragmatic: with an increasing number of technological devices in both home and workplace environments, and more appearing often, thanks to the endless march of progress, the complexity and difficulty of any given machine had to be minimized to ensure consumer goods could deliver the ease which they promised.

But this nascent proto-usability was limited, often along gender lines: for women and children at home (and men outside of work settings), making things easy to use was normal, a matter of foregrounding the simplicity of the already simple. For men at work, technological sophistication retained complexity and difficulty, and early proto-usability efforts (in “human factors” or “ergonomics”) sought ease of use only in the service of increased functionality and productivity—as in Frederick’s view of household engineering. Regardless, demands for ease grew, and it became an ideological power which influenced the development of numerous household goods, and bolstering the explosion of convenience products and services.

The introduction of graphically oriented desktop computing—popularized by the 1984 introduction of the Apple Macintosh operating system—extended demands for ease and

usability to nearly all kinds of technological products in all kinds of situations. Like many proponents of usability, Donald Norman contended that making technology easy to use increased productivity by eliminating errors and accelerating learning. His 1987 *The Psychology of Everyday Things*, a watershed for ease and usability, includes numerous statistics which show the labor costs recovered by shaving a few seconds off frequently repeated tasks. But resistance to products which called attention to their easy nature, like the Mac OS, was notable; opponents of usability considered its pursuit wasteful, and questioned the integrity and effectiveness of technological systems which required it. John C. Dvorak invoked gender roles in his attack, calling the Macintosh “effeminate” and championing its competitor, the IBM Personal Computer (PC), as “a man’s computer designed by men for men.” For Dvorak and others, serious work didn’t need usability, and instead kept its focus on the bottom line. But the opponents of usability were unable to overcome the massive power of ease, and it has become the most dominant force shaping the design and use of technological systems—following the transactional logic of consumer culture in which ease first developed.

Extreme usability is the latest manifestation of ease, providing a conduit for extending its simplicity, comfort, expediency, and pragmatic character to increasingly sophisticated technological systems and devices. However, extreme usability also extends the ideological framework of ease as well, bringing the assumption of a commercial context, lack of critical engagement, and desire for speed and convenience typical of consumer culture to our understanding of technology. Like ease, extreme usability encourages out-of-pocket rejection of difficulty and complexity, displacement of agency and control to external experts, and represses critique and critical use of technology in the name of productivity and efficiency. Usability is, by definition, heavily pragmatic, but complex concepts moderate this pragmatism through interdependence with other qualities (such as user satisfaction), and by making

usability one part of a larger process of user-centered design and development. But extreme usability's monolithic embrace of ease lacks similar checks and balances, and is less suitable for the complexity of technological systems—including reading and writing—which map poorly onto the transactional logic of “making it easy.”

The etymology of “extreme” shows the transfer of the paradoxical ideology of ease to usability. Recently emerged meanings of “extreme” connote technological advancement, atypical power, and a desire for risk and innovation which makes “extreme” sports, technologies, or products unsuitable for use by individuals uncomfortable with risk or innovation.ⁱⁱ On the one hand, it seems inconsistent to apply this sense of “extreme” to usability—why would sophisticated, cutting-edge technology be extremely usable? But as was the case with consumer goods and technologies which are made easy, the assumption is that extreme usability shifts the risk and danger of extremity to the expert designer, writer, or software programmer, making the power and performance of “extreme” technology accessible to the novice user. The ideology of ease assures the novice user that the concomitant loss in power and agency is insignificant, and any increased cost sustainable as well. The result all but eliminates the possibility of a technology centered around user needs—undermining the methodology usability.

Extreme usability appears both as a quality of technological systems or consumer goods, and as an approach to attaining and evaluating usability which applies the restrictive definition of usability to simplify, reduce the cost of, and expedite the process for usability assessment and implementation. I would like to discuss both forms in depth.

Extreme Usability as a Quality Possessed by Technology

Jakob Nielsen has done more for popularizing usability than anyone, and his widely read *Designing Web Usability* has arguably provided the most widely known theories of usability. Somewhat surprisingly, it makes only passing mention of Nielsen's large body of sophisticated and nuanced research into usability.ⁱⁱⁱ Though the book does not use the phrase, I believe that *Designing Web Usability* advances extreme usability, since its dominant concept of usability is generally congruent with the properties of ease, as it developed in consumer culture. Indeed, ease has a high profile in the text, appearing primarily as "the practice of simplicity," which is not only the subtitle of the book but an excellent summary of its ethos. As with ease, simplicity repeatedly beats complexity for a variety of reasons, not the least of which is achieving speed (22, 42-51). *Designing Web Usability* also speaks out against the complexities of metaphor in writing or site design: "Users don't live in the metaphor world, they live in the real world. [. . .] it is usually better to be very literal" (180). For web-based text, Nielsen's work argues that usability is achieved through brevity, recommending "no more than 50 percent of the text you would have used to cover the same material in a print publication" (101). Writers should also cultivate "scannability" by highlighting keywords using bold formatting, bullet points, and writing informative, literal headlines and subheads (104-6). Paragraphs should contain one idea, using topic sentences and simple sentence structures (111). *Designing Web Usability* advocates a journalistic writing style, including preference for the inverted pyramid (112), but also reminiscent of concepts of "good writing" codified in American composition classrooms during the nineteenth century—which, as I have argued elsewhere, was shaped predominantly by ease.^{iv}

Most problematically, in *Designing Web Usability* Nielsen presents the web—and usability—as if both were limited to no-nonsense facilitation of electronic commerce:

Usability rules the Web. Simply stated, if the customer can't find a product, then he or she will not buy it. [. . .] While I acknowledge that there is a need for art, fun, and a general good time on the Web, I believe that the main goal of most web projects should be to make it easy for customers to perform useful tasks. (Nielsen 1999 *DWU* 9, 11)

In recent interviews, and “Alertbox” columns on his website Useit.com, Nielsen has softened this hyperpragmatic stance, allowing for the diversity of activities which occur on the Web (2002a, 2002b). However, he continues to assume a high level of commercial activity. One “Alertbox” focusing on improving homepages offers first, “Emphasize what your site offers that’s of value to users and how your services differ from those of key competitors” (2003). This focus on commerce reduces the effectiveness with which usability can be considered as a dimension of technical communication, which is obviously not necessarily transaction-oriented—web pages designed for individuals, courses, or other purposes are difficult to evaluate using these criteria. Overall, *Designing Web Usability* advances a concept of usability similar to Donoghue’s “experience that makes it easy to complete goals and accomplish tasks with a minimum of friction” (5). In Nielsen’s vision of the Web, the ideology of ease is king, and both reading and writing mirror the transactional logic of consumer culture.

Donoghue, who uses the phrase “extreme usability” several times, focuses on the larger framework of user experience, defined as “the behaviors and attitudes of end users and their incentives to actually use the system” (xviii). For Donoghue, ease of use is the most important attitude associated with user experience and her concept of usability:

Ease of use should be embedded in the DNA of the user experience and intrinsic to its development process. It should be present in every atomic action in the experience, in each and every click. [. . .] Disney World is an environment where entertainment and suspension of disbelief are maintained through the entire experience. Drop a paper cup on the ground and a smiling Disney character walks by and—in a single graceful gesture designed to maintain the suspension of disbelief—the cup is swept away. User experiences should strive to be this proactive, transparent, and useful. (Donoghue 50)

Evaluating Disney World as the ultimate user experience shows the extremity of Donoghue's concept of usability and user experience. The example suggests a tremendous cost for achieving usability: consider the amount of effort needed to maintain the environment she portrays. Usability and user-experience design seem to be a dirty job, cleaning up after other people who can't be bothered to clean up after themselves, yet appearing happy despite the menial nature of the work. What matters is the ease of use apparent to the clients or the users of a system; what's behind the mask of the interface (or in this case, the Disney character) is not at issue. In patterns similar to those Evan Watkins observed in *Throwaways*, the cost of usability is downplayed, and a lot of labor is made invisible.

Facilitating fun and enjoyment, less emphasized in *Designing Web Usability*, is critical for Donoghue's idea of usability. Once again, a single dimension of usability present in the complex definitions noted above—*user satisfaction*—is elevated, and Donoghue expects these demands for increased satisfaction and enjoyment to increase (51, 61). This is not surprising for a concept in which ease is fundamental: Donoghue's extreme usability represents the culmination of the "comfort in use" trend which began with household products contemporary to Christine Frederick.^v

A second example shows that Donoghue's extreme usability seriously undermines the power and agency of the customers it is supposed to benefit. A clown employed by a furniture store strolls up when Donoghue and her husband are browsing, and amuses their toddler long enough to allow a salesperson to negotiate a price and "close the deal." For Donoghue, the clown's role in her experience is ideal because it "was something that was implicitly understood in the way the experience was architected—not forced or artificial, but translucent, as though it was a natural part of the experience narrative" (50). However, the process is definitely *not* user-centered: "Like the clown who appears exactly when you need him, the

experience will know what you need before you do” (51). The example exposes a tension in Donoghue’s book: on the one hand, she advocates an approach which cultivates trust, but on the other hand, if businesses “know what you need before you do,” the needs of the businesses will shape the user experience more than the user. Obviously, in such a relationship, there is room for businesses to shape “needs” to be congruent with profitability, but little room for consideration of user-centering, or the larger issues of culture I will discuss momentarily. While *Built For Use* devotes considerable attention to development of trust and desire for long-term relationships, portraying the user experience in this manner shows different ends. Later, when Donoghue argues that “[u]sability will continue to become a focus of the marketing group and will probably end as a function that lives inside the marketing group,” it is clear the trust she advocates is limited by its service to profitability (203). The demand for a friction-free user experience becomes little more than facilitation of the *creation* of customer “needs,” and usability limited to buying and selling. Again, this extreme concept of usability is shaped primarily by the ideology of consumer culture.

Like Nielsen, Donoghue places a large amount of emphasis on the first user experience impression, comparing it to a first date. This reflects the focus of extreme usability on novice, one-time users, and the scant attention devoted to more skilled users, or to novices who repeatedly use a certain interface. Johnson’s *User-Centered Technology* points out that novice/expert separation is deeply embedded in the Western model of technology; as I note above, this separation appeared in the proto-usability developed in consumer culture, and is characteristic of the ideology of ease. Like Dvorak, who blasted the user-friendly Macintosh, some still see usability as a crutch, necessary only for less capable users (e. g. women and children). Johnson argues that novice users supposedly require ease, as designed by experts, because of their shortcomings:

Users reside on the weak side of the idiot/genius binary. We have embedded the notion of technological idiocy so strongly in our culture that we actually begin to think of ourselves as idiots when we encounter technological breakdowns. Experts are the ones who “know,” so we let them have the power, which of course means we accept whatever is given to us. (45)

This is exactly the methodology Donoghue identifies: the experience, as predefined by the expert, knows better; it knows your needs before you do. Extreme usability corrects the shortcomings of novices, enabling them to function despite their “technological idiocy.”

Depressingly, many people buy into this perspective, demanding extreme usability and seeing products or systems which lack it as too sophisticated to be understandable. In this manner, the frictionless and transparent nature of extreme usability becomes self-perpetuating; because novice users develop only instrumental knowledge of a system, never conceptual knowledge, their need for extreme usability—and their need for the system to know their “needs”—can be perpetual.

Donoghue concludes *Built for Use* with a look to the future which includes extensive discussion of “ubiquitous computing,” the idea that computers will be spread through all parts of our culture by miniaturization and wireless networking (188-9), even embedded in human bodies, bridging the “wet-dry interface” (237). This concept of ever-increasing technological sophistication follows the uncritical concept of technology advanced by demands for ease:

1. Technology is not difficult intrinsically; most technologies can be made easy by expert designers.
2. When technology is not transparent, it has failed, or is deficient.
3. Technological systems which mimic natural patterns are best.
4. Economic growth and technological progress correlate.
5. Technological progress, and the drive toward ubiquitous ease, is inevitable and natural.

In Donoghue’s repeated calls for a transparent, invisible, and “frictionless” user experience, technology works best as the silent servant of humanity, and humanity works best when

seeking technological growth. Extreme usability perpetuates this view, discouraging awareness of the effects of technology, unlike more complex visions of usability, which, through testing and other mechanisms, position users as critical agents who shape technology through its use. Donoghue supports understanding the needs of the customer, but radically limits this knowledge, assuming that users are novices who prefer extreme usability, and that system designers envision users as critically disengaged consumers and purchasers.

As was the case with Nielsen, for Donoghue, electronic commerce and “useful tasks” are the sole end of the web—indeed, the end of most technological systems. While Donoghue’s approach includes examples which often entertain, the focus is buying and selling online. There is little room for other situations where considering usability might be relevant—such as the nurse-patient relationship which Mirel discusses (165-7), or the operation of simple everyday technologies like such as doors and light switches, which Norman has convincingly argued should be designed with careful consideration of usability (87-91, 96-9)—or for reading and writing technical communication.

Extreme Usability as a Methodology

In addition to lobbying for a concept of extreme usability, Donoghue argues for easier pathways to implementing usability, so that it will be a “natural part” of the process of the design and development process (203-4). This expectation is common. In the past twenty years, usability testing research has streamlined very labor-intensive protocols while maintaining or improving the quality of testing results. However, pressure to continue is provoking aggressive downsizing of usability testing, even the proposition that automated agents will replace human-administered testing. Much of the debate revolves around questions of scope: what should be considered “up for changes” during usability testing? Should

evaluators restrict themselves to the most direct involvement with the product, task, or communicative expression in question, excluding environmental and cultural factors? Here the effects of extreme usability become recursive: by advancing a concept of usability shaped by the ideology of ease, the methodologies of usability come under attack as well.

Attempts to streamline usability methods and the scope of evaluator concerns are usually well-intended. Usability advocates, and technical communicators like Mirel and Johnson, have recognized the extremely problematic nature of technical systems and communication developed by system-centered methods, which all but ignore usability. A well-implemented cycle of usability testing gives end users a voice in the design, production, and use of communication—and possibly a way to affect the practices and power exchanges which accompany its use. Fully developed concepts of usability allow immediate and more distant cultural factors to influence the design or writing process. Though the desire to make usability testing less expensive and time-consuming is often intended to encourage wider application of usability testing and user-centered thinking in general, sometimes changes include simplifications which parallel the extreme usability already discussed.

Usability Methodology and Automatic Usability

Nielsen pioneered movement towards less difficult and costly achievement of usability. In the late 1980s and early 1990s, he published a series of papers advocating “discount usability engineering.” At the time, usability testing practices mandated expensive laboratory equipment and specialized knowledge—and for many, it was considered an expensive extravagance. Contemporary usability advocates took great pains to justify the high cost of their work (for example, Dumas & Redish 18-20). Nielsen observed this could “intimidate” would-be testers, forcing them to “abandon usability altogether” (*Usability Engineering* 17). As

an alternative, he suggested a less complicated methodology which reduced the number of test users involved, used more common infrastructure, and substituted less expensive procedures—while still providing excellent benefits. These practices began to change the perception of usability and, arguably, laid the groundwork for more widespread application of user-centered methodology.

However, Nielsen's *Designing Web Usability* took methodology a step backward. Overall, Nielsen's work is a collection of best practices for web page design and information architecture based on the contemporary technological makeup of web servers and browsers. Attaining usability through iterative user-centered development is all but ignored in *Designing Web Usability*, bolstering the idea that there is an identifiable set of practices which make up the easiest usability possible. The implied methodology is disturbingly reminiscent of outdated conceptions of design and communication, in which “front ends” are established for computer programs by adding widgets selected from a palette of off-the-shelf standards, or style is added to writing by the manipulation of surface-level features.^{vi}

In much the same way that a concept of extreme usability developed from application of a limited concept of usability, a methodology of extreme usability is developing by selectively applying “discount” usability testing methodology. Practitioners are looking for deeper discounts—simpler, easier, faster, and cheaper:

Discount usability techniques can be used to test a site's users without setting up a state-of-art usability lab. The methodologies are also simple and easy to implement, and the test can be completed in a short period of time, which puts discount usability well within the reach of those who can't afford the time or money to commission professional laboratory usability studies. (Kheterpal)

This image of extreme usability methodology follows the conceptualization of technology common to ease noted earlier: if advancements in technology make things easier, shouldn't progress make “making it easy” easier as well? The expectation is that usability methodology,

like technology, should naturally get better over time, and that complicated usability methods, like complicated technological systems, are unnecessary obfuscations or outdated relics which can be set aside.

Part of the problem comes from a lack of knowledge of usability theory. The pragmatic definition of usability (its orientation towards tasks and use) is reinforced by the hands-on nature of usability testing. Doesn't it seem a bit odd for a methodology which includes validation of simplicity, ease, and satisfaction to be complex and theoretical? Existing textbooks bolster the belief that theory is much less important than practice. Mayhew introduces *The Usability Engineering Lifecycle* with a nod to its practicality:

This book is meant for practitioners. It is not a theoretical book, but a practical book that attempts to teach concrete, immediately usable skills to practitioners in product development organizations. (xii)

The trend of focusing on the practical as opposed to the theoretical is a well-established characteristic of ease. The opposition is often cast as “concrete or abstract,” demonstrating clearly the marked term. Like ease, extreme usability methodology emphasizes pragmatic knowledge and highly specialized skills, rather than generalized theoretical understanding. The former is more rapidly achieved, validating the expediency often present in ease, consistent with demands for transparency and effortlessness in Donoghue's characterization of extreme usability.

Mayhew's work also reflects the desire to streamline usability testing using “quick and dirty” methods, which substitute for more rigorous and expensive techniques (xiv). These “shortcuts” are intended to ensure that usability testers complete every step in the usability engineering lifecycle Mayhew advocates—even if variation in individual steps results in “varying degrees of accuracy and completeness” (20). Those using Mayhew's framework are told:

Use the more rigorous and accurate techniques described or referenced in this book when you can. But don't hesitate to use the shortcut techniques also described for any given task when necessary. They are always better than skipping a task altogether. (21)

However, Mayhew provides little direction about judging the appropriateness of these “quick and dirty” techniques—perhaps as part of the desire to avoid a seemingly theoretical presentation. Though the shortcut methods are a minor part of the text (seldom more than two paragraphs per section), I am alarmed they are so integrated into the methodology. Given the pressure to cut costs, complexity, and required time, and techniques which enable such economy, I believe most readers of Mayhew's text would consider her “shortcuts” quite seriously, and miss their original purpose—keeping her usability engineering framework intact. This is another example of a usability methodology which introduces weaknesses in the name of well-intended hope for wider application.

The tendency of ease to result in demands for speed and expediency is also apparent in software. Recent versions of eHelp Corporation's RoboHelp software are marketed with continued reduction in evaluation and infrastructure costs in mind. A rich feature set makes their flagship product RoboHelp Enterprise “the fastest, easiest, most cost-effective way to create, improve and publish Help systems.” It provides “comprehensive end user feedback reports that provide built-in usability testing so improvements can be made to the Help system” (“Corporate Profile”). These promises imply that performing usability testing, and interpreting and applying test results, requires minimal human involvement—both tasks can be accomplished by the computer. A white paper describing a newer version of the software more specifically names the capabilities involved:

New feedback and reporting technologies in server-based Help can take most of the guesswork and frustration out of developing Help systems and applications. These technologies provide valuable information on Help system usage and effectiveness, and can act as a continuous usability study. Using intelligent

server-based Help, technical writers and software developers have real-time access to feedback information that allows them to better understand their end users and design high-quality online documentation based on end users needs. Software developers can use this unique usability data to determine which features and enhancements the end users really demand. (“Improving Usability” 1)

Promotional materials for RoboHelp seem to oscillate on the question of human involvement: is it needed or, in fact, even beneficial? Can it be safely omitted? eHelp marketing documents suggest—echoing the practice/theory division discussed above—that technical writers lack time to perform usability testing, and see it as a “theory” with limited effectiveness. The RoboHelp product provides “a more scientific approach to development” (“Improving Usability” 5) which is additionally more cost-effective, and completes much of the work of testing on its own. eHelp stops short of arguing that computers can completely replace human-administered and interpreted testing, but definitely promises reduced direct involvement.

Addwise is even more assertive about its WebArch “automatic usability analysis,” claiming its software “helps companies maximize the commercial and informational benefits of the Internet by eliminating the inefficiencies and customer-discouraging flaws in their websites.” WebArch gives its users “insight into actual user paths, automatically identifying flaws in information architecture” (“Addwise Services: Usability Testing”). Associated marketing materials reduce the five part definition of usability to effectiveness, efficiency, and satisfaction, and portray human-administered usability testing—even the “discount” alternatives suggested by Nielsen and other writers—as unfeasible and time-consuming (“Automated Usability Analysis” 10). Addwise even suggests that usability evaluators are not objective enough to be reliable—unlike their software, which generates statistically verifiable data (“Automated Usability Analysis” 8, 10).

Taken in the aggregate, from the earliest days of usability engineering, through Nielsen's "guerrilla human computer interaction," to the partial or total automation offered by eHelp, AddWise, and similar firms, a gradual yet continual simplification of usability testing and implementation methods becomes apparent. In many cases, these changes are proposed in the interest of user advocacy—with the assumption that any attention to usability is better than no attention. But extreme development methodologies which transform usability testing into checking for best practices and adherence to conventions deemed "usable," or all but eliminate user involvement, making truly user-centered methodologies impossible, are potentially serious erosions of usability which reinforce problems caused by extreme definitions of usability.

Usability Methodology and the Question of Culture

Usability methodology is made easier not only by reducing its cost, time, and complexity, but through restrictions or exclusions which often involve considering cultural forces which might affect usability testing and assessment. As Bernadette Longo argues in another essay in this collection, technical communication has often narrowed the scope of inquiry through "a limited view of culture" (55). This approach allows communicators to consider the work environment or interpersonal relationships of a single organization, though it reduces specification of individual agency, but prevents establishing connections to larger cultural forces which may be more forwardly politicized. A narrow perspective discourages questioning assumptions about communication and technology reflected from culture into the environment, relationships, or organization under study.

However, many usability practitioners forbid even this restricted sense of culture, insisting that all investigations be limited to adapting the technological system at hand to

mitigate any problems created by the environment. In a hypothetical report based on a real-world case, Mayhew writes:

It is not our intention to be critical of or make recommendations for change regarding either the physical environment or the corporate culture—this is beyond both our expertise and the scope of the project. We make these observations simply because any computer system will be introduced in the context of both the physical and sociocultural environment, and these factors will heavily influence its reception and usage. We cannot change the environment, but by being aware of it, we can design the user interface to any on-line system in a way that best addresses the unique requirements of its users in their environment. (110)

Why should usability evaluations be interpreted and applied in this restrictive fashion? If the “physical and sociocultural environment” can “heavily influence” communication or technical systems, why not consider changes to the environment—at very least the physical one? In the example accompanying this quotation, the environment in a police precinct was “oppressive,” with harsh lighting, inadequate air conditioning, a high noise level, and other intensely negative factors (108). The evaluation admits these conditions adversely affect human performance (109), yet merely observes that this raises the bar for the usability task at hand (the development of a computer system for automated property processing). Mayhew is right that proposing correctives for some of these conditions might be beyond the expertise of a usability professional—but attempting to ignore them seems short-sighted. Why not suggest mitigating some of the problems with the physical environment? Why not point out the decreased morale caused in part by the position of the station commander? In this case, the terrible environment sets usability up for a failure, since the proposed technical system or communication must, at least to some extent, make up for problems introduced by the environment. This seems like a tall order: the installation of a such a system might treat the symptom, but miss the problem altogether.

As I noted in my introduction, Longo points out these self-imposed restrictions occurs in part because technical communication downplays the work of culture, assuming that its effects are “natural states of affairs, invisible relations enmeshed in intricate webs of institutional influences that appear inevitable” (65). This assumption reflects the correspondence between the terminology of extreme usability and its conceptualization of technological development: such matters involve forces too complex to understand and too widespread to influence. While the concept of “culture” here definitely has a wider scope than previously mentioned, cultural forces writ large and small are ignored because they can be difficult to change, and it’s easier for all involved to go along. In a critique of Nielsen’s limitations of scope, John Rhodes writes:

I might be wrong about Nielsen’s estimates but I *do* know that change is painful. Radical changes are radically painful. Many employees would prefer to suffer with what they know than benefit from change. Never forget that improving intranet usability is also about changing company culture. As many people know, **changing corporate culture is like trying to push a bus through a garden hose.** (emphasis in original)

If the intent of usability is the development of user-centered technological systems and practices of communication, despite its difficulty, we need to recognize the need to engage culture, at the level Mayhew refuses and beyond. As Longo argues, we need to consider the constructed nature of discursive practices, and “add discussions of power, politics, ethics, and cultural tensions to our understandings of what it is we do when we communicate” (69)—and when we attempt to improve communication and technological systems using usability.

Several specific trends in usability merit further discussion apropos the question of culture. First, usability testing often involves usability laboratories, specialized facilities designed to facilitate observation of the use of a technical system or document. In many labs, one-way mirrors conceal observers from the test user (see Dumas & Redish 383-95). Usability

labs can reproduce cultural disconnectedness by eliminating the context of situated use critical for usability (Mirel 182-3) and user-centered methodologies in general (Johnson 33-7).

Interestingly, discount methodologies encourage portable or temporary usability laboratories as a way to reduce the cost of associated infrastructure (Nielsen, *Usability Engineering* 205-6).

Carol Barnum also presents several methodologies for testing usability without dedicated facilities (see 18-21 for a summary). These methods prevent the exclusion of environmental and cultural factors which might be removed by a quiet, discrete, isolated laboratory environment. Though testing outside a dedicated laboratory has potential drawbacks—individuals involved in tests might feel uncomfortable being more aware of observers—it provides the context of use called for by Mirel and Johnson, and allows cultural factors to be addressed by usability evaluators.

Secondly, pressures to make usability quantitative and measurable have contributed to the exclusion of “subjective” factors like culture and environment. Dumas and Redish state, “A key component of usability engineering is setting specific, quantitative usability goals for the product early in the process, and then designing to meet those goals,” since the development of quantitative goals is one of the best ways to ensure a user-centered development process, and the mobilization of complete methodologies (11-2). But again, extreme usability is selective: as first noted above, eHelp markets RoboHelp by transforming this call for quantitative goals into a perceived need for “more scientific” methods of usability evaluation. From Christine Frederick forward, the history of ease and usability shows a continuous desire to be appealing to science and engineering through quantitative measurement. Extreme usability highlights this function, shaping definitions and methodologies to facilitate bracketing “subjective” cultural forces more directly associated with distribution of socioeconomic resources and power. As Longo writes, this approach is

appealing because “scientific discourse is seen as producing objective truths, [but] not seen as participating in culturally contextualized contests for dominance and power” (65). This brings me to my third and final point: the exclusion of cultural factors reinforces the invisibility of power relations associated with the perspective on technology and ease at the heart of extreme usability.

Extreme usability empowers the designers or writers of a technological system or communication, excluding supposedly irrelevant pressures like culture or environment because the power of the technological system surpasses these distant forces. Johnson points out that this systemic increase in power all but eliminates the power and agency of the end user, concentrating expertise and knowledge in administrators and designers. Rather than end-user needs, the focus is the stability of the system, since it is assumed the end users are unable to understand the complexity of the system design (26). Division of people into novice users and expert designers disconnects all but the most local contexts, portraying technology in isolation, “mere interaction between a user and a technological artifact,” rather than a complex view which includes culture, history, and community: “a complicated set of social, technological, and knowledge interactions that are difficult to decipher” (Johnson 57).

Longo observes, quoting Michel de Certeau, that the scientific and practical perspective of technical communication is intended to regulate naive “know-how” (59). Johnson’s corrective for the novice/expert binarism of the system-centered model seeks a middle ground: recovering a concept of *metis*, or cunning intelligence, which enables a higher degree of value to be placed on the practical “know-how” of the everyday repressed by science, while situating his “user-centered rhetorical complex of technology” in a field of pressures and constraints which includes consideration of cultural and historical factors (38-9). For Johnson, attention to the practical functions best when balanced by the broad perspective of the cultural. Similarly,

usability must acknowledge the situated character of the practical knowledge which is its focus, paying attention to culture by considering some or all of the five elements of cultural studies Longo specifies: discursivity, cultural context, historical context, implied order or subjugation, and self-reflexivity (66-9). The risk of not explicitly acknowledging culture in our definitions of usability and usability methodologies is giving back the gains usability has delivered in recent years.

Extreme Usability and Technical Communication

While the presence of extreme usability in technical communication is now limited, the huge influence of Nielsen's *Designing Web Usability* has led some writers to advance questionable concepts of usability. In *Web Word Wizardry*, Rachel McAlpine quite literally reproduces the belief in autonomous technology encouraged by extreme usability, frequently portraying the development of good writing as a matter of magic and luck. Similarly, Martha Sammons, in *The Internet Writer's Handbook*, shows a huge debt to *Designing Web Usability*, echoing its suggestions about usable web design and "good writing" with little alteration. Both texts advance very limited definitions of usability, repeating Nielsen's best practices approach, and making little mention of usability testing or other methods of measuring usability which involve readers or web site users.

Thankfully, there are good models for integrating usability in technical communication. Barnum's *Usability Testing and Research* begins by historicizing usability, providing a strong theoretical argument for a multivalent definition of usability, and throughout insists on a fully developed conceptualization. In *Technical Communication: A Reader-Centered Approach*, Paul V. Anderson pairs usability with persuasiveness, and makes it part of a comprehensive user-centered approach, reducing the possibility that student writers will employ extreme concepts

of usability which focus solely on ease and expediency. While there are problems with Anderson's text—his definition of usability is a little thin, and he sometimes presents ethical issues with weak connections to the rest of the text—his description of usability testing methodologies concisely presents “discount” methods without dumbing them down (360-72). Technical communicators should continue to integrate usability in textbooks and other instructional materials, maintaining involvement in the process of refining and evaluating usability theories and practices. In this manner, we can reduce the impact of the problematic trends in extreme usability I describe in the last parts of this essay.

The heart of any response to extreme usability is insistence on fully developed models of usability, and rejection of selective, patchwork concepts of usability mobilized to make the achievement of usability equivalent to “making it easy”—or in the service of very dubious ends, such as production of uncritical consumers in the hopes of increased profitability. Many of the definitions I mentioned earlier in this essay are ideal: Mirel argues for “a comprehensive vision of interrelated usability dimensions” which will “show that partial usability is no more favorable to users than partial system performance” (168-9). Her focus on usefulness is designed to prevent obsession with ease of use which Quisenberry and I both see as problematic. Though it predates the explosion of the Web, Nielsen's *Usability Engineering* includes complete concepts of usability and carefully designed methodologies.

Our discipline should keep careful tabs on the pragmatism associated with usability, since the former, when associated with ease, can be incredibly corrosive. As Quisenberry points out, usability has changed considerably since its introduction as a component of “human factors engineering,” and a highly task-oriented approach discourages its application in situations which are not task-structured (82). In this instance, cultural studies is especially valuable, since its broad approach prevents the task orientation of usability from myopic

exclusion of discursive, historical, and cultural contexts. Cultural studies demonstrates the relevance of considering the history of usability and provides strong justification for broadly construed and implemented concepts of usability. Additionally, paying attention to cultural factors strengthens usability by allowing practitioners to account and address troublesome cultural and environmental factors in the scope of usability methodology.

When evaluating technical communication for usability, we should never take a “best practices” approach. This literally transactional method, which suggests finding a path to usability can be pulled “off the shelf,” is simply incompatible with user-centered methodologies. Additionally, getting locked into particular best practices shuts off usability from new forms which organize and present information in innovative ways. For example, weblogs contradict conventional guidelines for creating usable online text—yet are wildly popular and clearly very usable. A best-practices perspective could not address the usability of weblogs, since their defiance of the triad of “brief, scannable, and objective” removes them from the lexicon of extreme usability. We can more effectively understand and improve these new forms (and the online cultures developing with them) if we consider them outside of the transactional framework of extreme usability.

A cultural studies approach to technical communication shows the limitations of extreme usability, as well as the strengths of the more complete concepts of usability from which extreme usability are derived. While perhaps more troublesome to teach and to implement than the streamlined concept of extreme usability, broader concepts of usability and more complete methodologies for achieving it promise much better results. The original purpose of usability—supporting and enhancing user-centered creative processes—can be achieved only by rejecting the reduction of usability to various forms of ease and making it easy. Technical communicators cannot afford to allow extreme concepts of usability to

undermine the continued growth of user-centered processes of writing and design. Nor should we resist the urge to point out that the ideological foundations of extreme usability have implications for our culture at large—not just our textbooks and classrooms.

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- i Gould and Lewis offer three principles to encourage the development of usability (300). Dumas and Redish also offer a multipartite definition (4). For more examples, and excellent discussion of the definition of usability, see Barnum 1-12 and Johnson 80-4.
- ii Examples of “extreme” being used in this way are widely diverse, including sports like snowboarding and freestyle bicycle riding, Apple AirPort Extreme networking hardware, “Extreme DVD” editions of Terminator 2, Aquafresh “Extreme Clean” toothpaste, and even a Jeep dealership in McHenry, Illinois. Some writers, including Donoghue, also draw parallels between the user involvement and iterative development of extreme programming (XP) and extreme usability (177, 186). See Belotti and Bankston *et al.* However, I believe this comparison owes more to the current popularity of XP than actual correlation of methodology.
- iii Online usability forums and the weblogs of usability professionals show extensive discussion about the incongruities of Nielsen’s previous work and *Designing Web Usability*. For many people, the book diminishes Nielsen’s considerable contributions to usability.
- iv See chapter four of *Ease in Composition Studies* for extensive discussion of the connection of ease and writing made in nineteenth-century American composition classrooms.
- v In fact, enjoyment and satisfaction have defined ease since the seventeenth century. See chapters two and four of *Ease in Composition Studies* for more history of ease.
- vi In the preface to *Designing Web Usability*, Nielsen promises to address methodology in a second book which, as I write this, has yet to be published.