The Sword of Data:
Does Human-Centered Design Fulfill Its Rhetorical Responsibility?
Erin Friess

For more than two decades, user-centered design (UCD) has been the guiding philosophy and process in the field of design from both practice and pedagogy perspectives. Although there is no singular agreement on just what constitutes UCD and many different names for and "flavors" of UCD have emerged—human-centered design, participatory design, activity-centered design, and contextual design, just to name a few—nearly every version relies on an early and continual interaction with people who will actually use the product.[1] Designers then use findings from the interactions (e.g., surveys, focus groups, card sorting exercises, document reviews, scenario-based testing, and plus-minus testing) to guide the design solutions.

User-centered design—or the more popular human-centered design (HCD)—has served the discipline of design well, giving design a purpose, a structure, and, perhaps most importantly, a story to tell. However, HCD, as it is often practiced today, is no longer just human centered but empirically centered. Rather than being guided by interactions with end users, designers are being forced into the role of engineer, making decisions based solely on quantifiable and easily relatable data gathered from the end users. To illustrate, in early 2009, Google's lead visual designer, Douglas Bowman, left the company because of the company's perhaps over-reliance on empirical data.[2] According to the *New York Times*, when a Google team couldn't decide between two shades of blue, a test was ordered on 41 intermediate shades to determine which one "performs better."[3] Bowman himself was asked to empirically defend whether a border should be 3, 4, or 5 pixels wide.[4] Ultimately for Bowman, data became "a crutch for every decision, paralyzing the company and preventing it from making any daring decisions,"[5] and his disdain for a "design philosophy that lives or dies strictly by the sword of data" eventually caused him to leave Google.[6]

Such a reliance on empirical data is, in many ways, human-centered design at its most extreme. While there is nothing inherently "wrong" in such an approach to design, focusing solely on user input to drive output betrays design's rhetorical roots. In what follows, I explore the history and practice of HCD, consider the rhetorical issues that arise with the practice of extreme empirical HCD, and suggest that a move away from empirically driven design and

1   J. Karat, M. E. Atwood, S. M. Dray, M. Rantzar, & D. R. Wixon (1996). *User-Centered Design: Quality or Quackery?* Paper presented at the CHI 96. J. Karat, "Evolving the Scope of User-Centered Design." *Communications of the ACM,* 40:7 (1997): 33–38.

2   Douglas Bowman, "Goodbye, Google." Stopdesign blog. http://stopdesign.com. Posted March 20, 2009 (accessed July 7, 2009).

3   Laura M. Holson, "Putting a Bolder Face on Google." *The New York Times* (March 1, 2009): BU1.

4   Bowman, "Goodnight Google."

5   Interestingly, number 5 on Google's list of "commands" for User Experience is "Dare to innovate."

6   Bowman, "Goodnight Google."

toward a more holistic, harmonic, and rhetorical approach to design is warranted.

A Look at Modern Human-Centered Design

Modern human-centered design is generally recognized to have begun at IBM in the 1980s.[7] At IBM's Thomas J. Watson Research Center, Gould and Boises first produced an unnamed methodology in 1983 that emphasized four "critical steps": 1) "Early focus upon the characteristics and needs of the intended user population," 2) users as part of the design team, 3) empirical and experimental measurement, and 4) iterative practices. They stated that their "design philosophy… is a principled approach which is necessary if progress toward significantly easier to learn and more useful systems is to be achieved."[8] This methodology was refined by Gould and Lewis in 1985 by omitting the step of including users as part of the design team.[9] Although the methodology still went unnamed, Gould and Lewis termed the three remaining steps "three principles of system design." Norman and Draper re-envisioned the three principles not as a methodology, but as a philosophy, and they named this philosophy "user-centered systems design," which was described as "a philosophy based on the needs and interests of the user, with an emphasis on making products usable and understandable."[10]

These early incarnations of HCD were important because they established user experience as a credible concern for designers and determined that the way to improve user experiences is to involve actual end users in the design process. Prior to these statements advocating HCD, design processes generally fell into one of two camps. The first camp was technology-centered design,[11] which focused on the capabilities of technology to drive innovation.[12] In this approach (often practiced by software developers and those in other engineering-oriented fields), the end product was often intolerant of minor user errors, was unable to give users what they wanted, and forced users to perform tasks in inelegant ways.[13] The second camp was designer-centered design, which focused on product creation based on designer intuition. However, according to Landauer, designers' "intuitions about what will make a system useful and useable for the people who will use it are, on average, poor."[14] And according to Norman (1988): "Even the best trained and best motivated designers can go wrong when they listen to their instincts instead of testing their ideas on actual users. Designers know too much about their products to be objective judges: the feature they have come to love and prefer may not be understood or preferred by future customers."[15]

Since these early incarnations, definitions of HCD have continued to proliferate. Some have highlighted incorporating end users into the actual design team (participatory design); some have highlighted ethnographic methods in user research (contextual

7   More broadly speaking, HCD's roots may very well lie in the late nineteenth century's Arts and Crafts movement (see A. Crawford, "Ideas and Object: The Arts and Crafts Movement in Britain." *Design Issues* 13:1 (1997): 15–26 and the ergonomics movements (M. G. Helander, "Forty Years of IEA: Some Reflections on the Evolution of Ergonomics." *Ergonomics* 40:10 (1997): 952–961; and N. Marmaras, G. Poulakakis, and V. Papakostopoulos, "Ergonomic Design in Ancient Greece." *Applied Ergonomics* 30 (1999): 361–368. In addition, returning to modern HCD, some posit HCD's modern origins within composition studies (K. A. Schriver, "Plain Language Through Protocol-aided Revision" in E.R. Steinberg (ed.), *Plain Language: Principles and Practice* (Detroit, MI: Wayne State University Press; and J.H. Swaney, C.J. Janik, S.J. Bond, and J.R. Hayes (1981). *Editing for Comprehension: Improving the Process Through Reading Protocols (Technical Report 14)* . Pittsburgh, PA: Carnegie Mellon University, Document Design Project,1991): 148–72, or earlier at IBM (M. Ominsky, K. R. Stern, and R. J. Rudd, "User-Centered Design at IBM-Consulting. *International Journal of Human-Computer Interaction* 14:3 & 14:4 (2002): 349–368.

8   J. D. Gould, and S. J. Boies, "Human Factors Challenges in Creating a Principal Support Office System: The Speech Filing System Approach." *ACM Transactions on Office Information Systems* 1:4 (1983): 273–298, 296–297.

9   J. D. Gould, and C. Lewis. "Designing for Usability: Key Principles and What Designers Think." *Communications of the ACM* 28:3 (1985): 300–311.

10   D. A. Norman & S. W. Draper, *User Centered System Design: New Perspectives on Human-Computer Interaction.* (Hillsdale, N.J.: L. Erlbaum Associates, 1986); D. A. Norman, *The Psychology of Everyday Things* (New York: Basic Books, 1988): 188.

11 "Technology-centered design" was also often called "system-centered design," which should not be confused with Buchanan's system design or Golsby-Smith's fourth order design. This early "system-centered design" focused narrowly on the artifact or the object being created. For definitions of "technology-centered design" and "system-centered design," see: R. R. Johnson, "User-centeredness, situatedness, and designing the media of computer documentation." *ACM SigDoc Asterisk Journal of Computer Documentation,* 14:4 (1990): 55–61; T. K. Landauer, *The trouble with computers: usefulness, usability, and productivity.* (Cambridge, MA: MIT Press, 1995), M. R. Endsley, B. Bolté, and D. G. Jones, *Designing for situation awareness: an approach to user-centered design.* (London; New York: Taylor & Francis, 2003).

12 As has been pointed out previously (notably, R. R. Johnson, *User-centered technology: a rhetorical theory for computers and other mundane artifacts.* (Albany: SUNY Press, 1998) and, C. Spinuzzi, "Toward integrating our research scope: a sociocultural field methodology." *Journal of Business and Technical Communication, 16*:1 (2002): 3–32, "technology-centered design" has been something of a strawman for advocates of HCD as users have, to some degree, always been a concern for designers.

13 A. Mital, and A. Pennathur, (2000). Perspectives on designing human interfaces for automated systems. In R. L. Shell & E. L. Hall (Eds.), *Handbook of industrial automation* (New York: Marcel Dekker, Inc, 2000): 749–792.

14 Mital, *Perspectives*, 218.

15 Mital, *Perspectives*, ix.

design); some have highlighted the iterative aspect of HCD; and some have highlighted the tasks an end-user performs (activity-centered design). Although it appears on the surface that no two definitions of HCD are exactly the same, sometimes, differentiating between two supposedly distinctive definitions of HCD is highly difficult. Despite the multitude of names, there appear to be two common themes in all versions of HCD: 1) conduct research with real people who are likely to use the product, and 2) use that research to drive the design solution.

These themes are good ones, even critical to the relatively new field of design. It is important that designers conduct research with actual end users and that they use these research findings for design purposes. However, user data, I argue, should not be the only driving factor of design. I anticipate that in practice other mitigating issues do come into play. For example, a group that I observed had a brief discussion about the color of the text in a document.

Nate: So, yeah, after we finished the scenarios, we asked her just what she liked and what she didn't like. And she said that she thought that the black text was, ya know, typical, and that she would have liked something different. I think she said something more exciting, like pink.

Jenny: Pink?

Nate: Yeah, pink.

(Group laughs)

Laura: She actually said pink?

Nate: Yes, she actually said pink.

Laura: Okay, uh, yeah, that's not happening. Anything else of use from the session?

In this example, we see these designers deal with an unexpected finding from an actual user interview. These designers have written on their statement of work that they "consistently consult with users on an ongoing basis, to assist [them] in both the generation and evaluation of concepts and solutions," and they routinely tell their clients that they will test proposed solutions with end-users to determine the solutions' viability. Yet in this exchange, we see the group rejecting the finding without any subsequent interactions with users to justify the rejection of the user-derived data.[16] If data gathered from HCD processes is, as Beyer and Holzblatt claim, "the base criteria for what the system should do and how it should be structured,"[17] then does this rejection of a user-derived finding indicate that this group is not conducting a human-centered design process?

I posed this question to two usability professionals. I gave them the transcript of the conversation, and their responses (from their emails to me) were thus:

Professional #1:

This group isn't doing user-centered design. A user made a

clear statement that she wanted pink. I'm assuming that she didn't have trouble actually reading the text, but this group should've conducted further usability testing to see if other users would've also preferred a different color of text (from the transcript it doesn't look like the question was part of a standard protocol). Perhaps shades of gray . . . I would feel very uncomfortable getting this [as a data result] and leaving it alone . . . Laura shutting it down was premature.

Professional #2:
I hate it when I get results like this! If I did the test and had someone say they wanted the text to be pink, I would have probably ignored it . . . [and] wouldn't have told anyone or included it in a report because it is so far out there. I know that the designers I work with would never in a million years use pink as the body text, so I wouldn't even put it out there to bother them with it. It would be an outlier unless I get a bunch of people saying they wanted text to be pink or a different color or something. But are they practicing [human-centered design]? I guess I would have to say no, but I couldn't fault them for that. I would say… they were being sane.

Therefore, according to these two usability professionals, the comments by the designers suggest that they aren't doing HCD because they ignored a statement of concern by a potential user. For professional #1, this is problematic because it violates the underlying philosophy of design, in which design is based on user input. Professional #2, however, doesn't fault the designers for using their own intuitions to reject something that, in her realm of experience, would likely be rejected by other users or the client. Given the interpretations of the designers' discussion, it appears that HCD may indeed be, as Douglas Bowman found at Google, empirically driven. In empirically centered design, data that is gathered from users drives the design, while intuitions by human designers that are unsubstantiated by user data go unexplored or unmentioned. In other words, in empirically driven HCD, the only humans that have a voice are the end users.

Rhetorical Problems of Empirically Driven HCD
This empirically centered design is problematic in that it denies critical aspects of rhetoric, which, as Richard Buchanan and others have pointed out, shares a complex and intertwined history with design. Let me be clear that in what follows I am by no means suggesting that we eradicate human-centered research practice from design. What I am suggesting is that a re-evaluation of this version of HCD, in which empirical user data is weighted above all else, is warranted because of the rhetorical implications of such a model. In

16 It is interesting that the designers cling to the idea of pink text, when Nate actually says, "she would have liked something different. I think she said something more exciting, like pink." The suggestion by the usability participant is actually much broader than pink text—she wants something "different" and "exciting." Perhaps more experienced designers who were not days away from a deadline would have focused more on the acceptable abstract concerns (which might have suggested testing on layout, line length, leading, or other similar other issues) rather than the easily discarded concrete concern.

17 H. Beyer and K. Holtzblatt, *Contextual Design: Defining Customer-Centered Systems* (San Francisco: Morgan Kaufmann, 1998).

the following, I outline three ways this perhaps extreme over-reliance on user data—a reliance that some have claimed to be the very thing that makes design rhetorical—may actually make the HCD process arhetorical.

Rhetoric, according to Aristotle, is the "faculty of observing in any given case the available means of persuasion."[18] For Aristotle, all spoken communication is inherently rhetorical and makes use of the three means of persuasion (also known as the rhetorical appeals): *ethos* (the character of the speaker), *pathos* (the emotional state of the hearer), and *logos* (the argument within the communication itself). Buchanan has linked the discipline of design to rhetoric[19] and has suggested that products created by designers are rhetorical in that they can present *logos* (the "technological reasoning or the intelligent structure of the subject of their design"), *pathos* ("the 'suitability' or 'fit' of a product to the intended user or community of users"), and *ethos* ("the implied character or personality of the manufacturer as it is represented in a product") as persuasive means between the designer and the end user.[20] According to Buchanan, "the designer, instead of simply making an object or a thing, is actually creating a persuasive argument that comes to life whenever a user considers or uses a product as a means to an end."[21] The way a final product makes an argument to the end user is through its *ethos*, *logos*, and *pathos*.

I agree with Buchanan's assessment of the rhetoricity of products, but I wish to extend rhetoric beyond the end products of design and to the actual process of design itself. In other words, in addition to their use of rhetorical appeals to create an argument *within* a product (as Buchanan suggests), designers also create a rhetorical argument *for* a product or a version of a product during their design process. Indeed, while designers create for end users, they must also be able to argue for and explain their design choices to their colleagues, their employers, and their clients. In addition, just like the products themselves, designers can argue for their design choices using *ethos*, *pathos,* and *logos. Ethically*, designers can consider their own intuition and conscience when defending a design decision. *Pathetically*, designers can contemplate empathic appeals based on their own (and perhaps anticipated) user experience. *Logically*, designers can contemplate rational appeals derived from user-centered research and usability studies. Taken together, these appeals allow designers to avail themselves of all accessible means of persuasion during the process of design. However, an emphasis on empirical data can lead to an arhetorical design process because of its *logos*-centrism, its denial of agency, and its exigence-ignored rhetorical situation.

Logos-Centered Process
Empirically centered design, which requires the designer to create products based on outcomes from user research, is essentially *logos-*

18 Aristotle, "Rhetoric." In J. Barnes (Ed.), *The Complete Works of Aristotle: The Revised Oxford Translation*, Vol. 2, (Princeton, NJ: Princeton University Press, 1984): 2152–2269.

19 R. Buchanan, "Declaration by Design: rhetoric, Argument, and Demonstration In Design Practice." *Design Issues* 2:1 (1985): 4–22.

20 R. Buchanan, "Design and the New rhetoric: Productive Arts in the Philosophy of Culture." *Philosophy and Rhetoric* 34:3 (2001): 195–96.

21 Buchanan, 1985, pp. 8–9.

centric design. If designers only use *logos* to drive design, they may be practicing design as a dialectic, rather than a rhetorical, art. Dialectic is a sister discipline to rhetoric, and, like rhetoric, it is concerned with persuasion.[22] However, in dialectic argumentation, only the rational and the logical are considered; an appeal to emotion is considered a fallacy, and concern for the audience is considered irrelevant. According to Michael Leff, dialectic "need consider only the *logos* of argument and can bracket matters of character (*ethos*) and emotion (*pathos*)."[23] In dialectic argumentation, the rational and the logical are valued above all else. In rhetorical argumentation, the rational and logical have a place within the argument, but concerns for character and emotion are of equal import. Therefore, if designers are making design decisions based solely on user data (*logos*), then their design process is dialectical and arhetorical. This is not to suggest that the subsequent products are also arhetorical, as they may contain arguments based on *ethos*, *logos*, and *pathos* as established by Buchanan.[24]

Loss of Rhetorical Agency

In addition to a *logos*-centric design process, designers who are faced with empirically driven design processes can also find themselves without rhetorical agency. Rhetorical agency, according to Karlyn Kohrs Campbell, is "the capacity to act . . . to have the competence to speak or write in a way that will be recognized or heeded by others.[25]" For designers, rhetorical agency resides in their ability to select from the full range of the available means of persuasion the particular combination of means that would most likely satisfy and persuade the intended audience. In a rhetorical design process, the designers would have the power to contemplate the persuasiveness of their own intuitions, the anticipated user experience, and the user data to inform their product design. However, in the arhetorical design process of empirically driven design, designers can only use one available means of persuasion: user data. By only having *logos* at their disposal, designers are stripped of their agency—they do not have the capacity to act in a way that will necessarily be heeded by others. With the loss of agency, designers lose the ability to sort through some of the available means of persuasion in their process. If the only means of persuasion is *logos*, then the designers are reduced to automatons that have no choice—decisions must be made in line with user data.

An Unbalanced Rhetorical Situation: Absence of Exigence

According to Lloyd Bitzer, a rhetorical act (be it a product, a discourse, or a process) occurs in response to a rhetorical situation.[26] The rhetorical situation is made up of three components: *exigence*, *audience*, and *constraints*. In brief, the *exigence* is "an imperfection marked by urgency; it is a defect, an obstacle, something waiting to be done, a thing which is other than it should be." For designers,

22 See *Argumentation* 14:3 (2000) for a special issue dedicated to dialectic and rhetoric theories.

23 M. Leff, "Rhetoric and Dialectic in the Twenty-first Century." *Argumentation,* 14 (2000): 244.

24 However, we might need to question just how rhetorical a product can be if the process that creates it isn't itself rhetorical.

25 K. K. Campbell, "Agency: Promiscuous and Protean." *Communication and Critical Cultural Studies* 2:1 (2005): 1–19.

26 L. Bitzer, "The Rhetorical Situation." *Philosophy and Rhetoric* 1 (1968): 1–14.

the *exigence* may very well be the design problem. The *audience* consists "of those persons who are capable of being influenced by [the rhetorical act]." The *audience* often consists of the end users of the product. The *constraints* are "made up of persons, events, objects, and relations which are parts of the situation because they have the power to constrain decision and action needed to modify the exigence." Many different *constraints* may exist, such as monetary, technological, cultural, or demographic constraints. For example, I once asked students to create a map for me to give to other people to help them find my secluded office. I presented them with the *exigence* (visitors had trouble finding my office) and the *audience* (people in search of my office). However, I did not make explicit the *constraints* of the map[27]—namely, I needed it to be something that I could respectfully show to potential visitors, and I needed it to be something that could be reproduced cheaply for these visitors. Thus, I found myself with two maps that were very unique, appropriately directed people to my office, and were unusable: One was titled, "Where the #*&% is Erin Friess' Office?" and the other was an ingenious map printed upside down on a T-shirt so that the wearer could look down at the shirt he or she was wearing to find his or her way to my office. Unfortunately, the former violated the cultural constraint of appropriate language for the map, and the latter violated the budgetary constraint for the map.

Every product for a designer stems from a rhetorical situation that has an *exigence*, an *audience*, and *constraints*. Designers must ponder these three elements before producing or refining their rhetorical act or product. However, empirically centered HCD appears to focus strongly on the audience (the end users who can be affected by the rhetorical product) and, to some extent, the constraints derived from the audience. Other constraints (such as the cultural and budgetary constraints of creating a manual with pink text) are not considered in the design process. Furthermore, the exigence, the cause for the need for design, doesn't appear to be a reason for design outcomes. Although the audience and constraints carry much weight, the history of the need for the design, past versions, and institutional memory are of no import. According to Bitzer, a rhetorician/designer must carefully consider all three elements before making the product. If only audience and constraints are considered, then the situation, from the view of the designer, is not rhetorical, and therefore a rhetorical act cannot take place. Once again, relying solely on audience input makes the design process arhetorical.

Therefore, because of an emphasis on designing based on *logos*, the loss of rhetorical agency, and the unbalanced rhetorical situation, designing from a strictly empirical perspective may dislodge design from its rhetorical roots.

An Ethnographic Look at the Design Process
I have suggested that the empirically centered design process is

27 And it appears the students didn't think about the potential constraints of the situation.

essentially arhetorical. In the early days of design, the pendulum of the design process had swung to an apex of technological and designer concerns. Since that time, the pendulum has swung down and away from those concerns and toward the concerns of the people who will actually use the product. I believe that the pendulum has reached or is quickly reaching the opposing apex, that of a design process based entirely on end-user concerns. To this day, there are some designers, such as those at Google, who rely heavily on user data, and other designers who prefer a more designer-intuitive approach to the process. However, I believe that most design projects fall somewhere in the middle on this continuum.

To better grasp how designers defend their design decisions, I attended and observed the meetings of a group of designers for more than a year and listened to how they defended their design decisions to one another. For example:

Don: Let me put it another way: Do we need a, a more robust numbering in the, in the book itself?

Nate: I think so, I mean Carol and, umm, Amy's tests show some confusion going on there.

In this example Don makes the claim that more robust numbering is needed, and Nate then supports that claim with results from usability tests (*logos*) that showed "some confusion going on there."

This group consisted of relatively novice designers associated with a particular school of design that places a high emphasis on HCD practice. The vast majority of these designers were students pursuing their MA or PhD, but their work on a very real project with a very real client was done outside of their respective degree programs, and they were paid for their work. In addition to being associated with a school of design that emphasized HCD, this group internally placed a high value on HCD. A significant portion of the designers' time consisted of conducting initial user research, plus-minus testing, card-sorting, and various other user research and usability tests. I anticipated that, with their apparent dedication to HCD, the designers would use appeals to user data (*logos*) to defend their design decisions. However, over the course of the year, only 12.1 percent of their appeals referred to user data. Approximately 7 percent referred to another *logical* category, that of expert authorities. Storytelling of hypothetical outcomes (*pathos*) made up 19 percent of the appeals, while appeals to individual designer opinion (*ethos*) made up approximately 20 percent of the total appeals intended to defend design claims.[28] In this initial study, *ethos*, *logos*, and *pathos* were used approximately equally over the course of the year.[29]

This study can be viewed in two ways. Originally, from the view of traditional HCD, this study seemed to show that these designers are not conducting HCD at all. Although they are doing research, they are not, apparently, using that research to fuel their design. By ignoring the user data when they ostensibly need it the

28   Another 22 percent of the appeals referenced multiple kinds of appeals. The remaining 19 percent of the appeals consisted of appeals that individually made up less than 5 percent of the appeals. These included appeals to humor, appeals through flattery, appeals to client expectation, among others. For a more detailed description of this study and its implications for HCD, see Friess, *Designing from Data: Rhetorical Appeals in Support of Design Decisions* (forthcoming in *Journal of Business and Technical Communication*).

most, these designers instead are pursuing a designer-centric design in which they base decisions solely on their intuitions without regard for user research.

Subsequently, upon further reflection, it became apparent that although these designers aren't pursuing empirically centered HCD, they are practicing a rhetorical design process. Indeed, these designers are not relying solely on user data (*logos*) to support their design decisions, but on a combination of *logos*, *ethos*, and *pathos*, which means their design process is *not* empirically driven HCD. They are drawing upon all the available means of persuasion to create an argument for their product, and it is this broad look beyond user-derived means that makes the process rhetorical. Furthermore, this particular group created well-received and award-winning documents based on their work, and it is clear that their process was not solely empirically driven.

These observations of the linguistic practices of an individual group and the group's invocation of data may be idiosyncratic; nevertheless, the results of this year-long ethnographic study suggest that more research is needed to determine how designers do and do not use data to reach their design decisions.

Rethinking the Design Process

Design based entirely on user data is not necessarily, in and of itself, rhetorical. I believe that relying solely on user data is indeed a way to create products, and sometimes a very successful way to create products (as Google and others have shown). But bracketing emotion and character for the sake of user data does not make a design process "more" human centered. As Buchanan has stated, "usability plays an important role in human-centered design, but the principles that guide our work are not exhausted when we have finished our ergonomic, psychological, sociological and anthropological studies of what fits the human body."[30] Indeed, to truly create human-centered products, we must use those attributes that make us human—the ability to understand emotion and the ability to assess character.[31] According to Bill Moggridge, design needs "people with a subjective, empathetic approach to design."[32] While an automaton may be able to assess the cold data established during research, only designers can assess the *pathos* and the *ethos* of that data to contextualize it and to make both an argument and a product that more appropriately responds to the design problem.

Therefore, I suggest that the HCD process needs to be re-envisioned. Rather than seeing the end users as the humans at the center of the design process, we need to see the designers as the humans at the center of the design process. This suggestion is potentially scandalous; recognize, however, that I am positioning the designer at the center of the design *process*. The product should result in an appropriate user experience by enabling the user to accomplish a task in an emotionally desirable way. To do that, part (but not all) of

29 However, individual meetings often had highly lopsided uses.

30 R. Buchanan, "Human Dignity and Human Rights: Thoughts on the Principles of Human-Centered Design." *Design Issues* 17:3 (2001): 37.

31 The debate of rational *logos* versus emotion and character is in no way limited to the sphere of design. In President Barack Obama's nomination of Sonia Sotomayor to the bench of the U.S. Supreme Court, he quoted Justice Oliver Wendell Holmes: "The life of the law has not been logic, it has been experience… it is experience that can give a person a common touch and sense of compassion, an understanding of how the world works and how ordinary people live." Subsequently, much debate began on the role of judges and justices—are they solely to be rational interpreters of the law that practice judicial restraint or are they to show empathy for the situation at hand?

32 This was taken from Bill Moggridge's opening plenary at CHI '07.

the design process should stem from usability studies, user research, and other traditional HCD tasks. However, in considering the data collected from such work, the designer still stands at the center of the process, contemplating other issues of implication. In addition to user data, designers must contemplate their own knowledge, experience, and anticipations along with client desires and commands.

This is not to suggest removing user-based research in any way. Indeed, to do so would be tantamount to sending the pendulum back to the system- and designer-centered models from the early years of design. However, by returning the designer to the crux of the rhetorical situation, designers will be allowed to design while contemplating the many facets that make a process and product rhetorical. A designer-centered rhetorical model coupled with a human-centered (though not empirically-centered) concern for the product allows for a design system that empowers both the designers who make the product and the users who incorporate the product into their lives.

Conclusions and Questions
I have suggested that empirically centered design is an arhetorical design practice and that, by returning the designer to the crux of the rhetorical situation, we may achieve a process of human-centered design that is both rhetorical and empowering for the users and the designers. This exploration, while offering a change to current processes, has also brought to light two questions worthy of further discussion:

What is wrong with empirically centered design? Nothing is inherently wrong with arhetorical, empirically centered design. Indeed, it appears from many accounts that empirically centered design is the driving force of Google, a company few would call anything other than successful. Making products based solely on user data is possible and can produce, in certain circumstances, outstanding work, as it has done for Google. For some entities, such a process might even be ideal. However, this process should not necessarily be called design, nor should the people creating objects from user data alone be called designers. "Design" invokes aspects of planning, and "designer" invokes someone contemplating various situations and putting forth the plan. An empirically centered process negates the planning aspect, as there are not multiple choices to be had, but only one choice: the choice dictated by the users.

What are the implications for design pedagogy? Design pedagogy, like HCD, has various facets and theories. The group that I observed for one year matriculated in an institution that was extremely dedicated to HCD, and yet in practice, their process was less than empirically centered. Is this

considered HCD, or is it something else? At the very least, students of design need to understand that their own intuitions may clash with user-derived data, and they should be prepared to negotiate their own responses to the conflicting information. Like the discussion of the pink text, the designers had little trouble discarding the user data in favor of their own intuition; however, in what instances should designers discard their own intuition in favor of the user data?

HCD was originally devised to provide a more rhetorical process for design than that offered by technological- or designer-centered design. However, this empirically driven HCD isn't itself rhetorical because, I have argued, it abandons *ethos* and *pathos*; it strips the designer/rhetor of agency; and it only partially addresses the rhetorical situation. Design, as we have been told, is a rhetorical endeavor that involves bringing a persuasive argument to life. Designers must value their end users, but, to provide a truly rhetorically persuasive process, they must also consider their own intuitions and experiences. Therefore, I believe that a more harmonic model of the design process is warranted—a model that places designers—not technology and not users—at the center of the design process and that focuses on designers' unique understanding of the *ethos* and *pathos* of the art of design. A designer-centered model of the design process that includes an end-user–centered focus on the outcome of the product could provide a more accurate reflection of design as a truly rhetorical endeavor.