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Recovering Delivery for Digital Rhetoric and Human-Computer Interaction

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Abstract. *This article develops a rhetorical theory of delivery for Internet-based communications. Delivery, one of the five key canons of classical rhetoric, is still an important topic for rhetorical analysis and production. However, delivery needs to be re-theorized for the digital age. In Part 1, the article notes the importance of delivery in traditional rhetoric and argues that delivery should be viewed as a form of rhetorical knowledge (*techne*). Part 2 presents a theoretical framework for "digital delivery" consisting of five key topics — Body/Identity, Distribution/Circulation, Access/Accessibility, Interaction, Economics — and shows how each of these topics functions strategically to guide digital production.*

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My aim here is to resuscitate and remediate the rhetorical canon of delivery, which, along with memory, is one of the two neglected canons of the art of rhetoric. Delivery — *actio* or *pronuntiatio* in classical Roman rhetoric, *hypokrisis* in Greek (Lanham, *Handlist* 165-66; Connors; Nadeau; Reynolds, "Delivery") — was one of the five major classical rhetorical canons, along with invention (*inventio*), arrangement (*dispositio*), style (*elocutio*), and memory (*memoria*). In classical rhetoric and through most of the history of rhetoric, delivery referred to the oral/aural and bodily aspects of an oral speech or performance — i.e., to the speaker's voice (intonation, volume, rhythm) and to bodily movements and gestures (Lanham, *Handlist* 179). Because delivery came to be associated almost exclusively with speech situations and with functions of the speaker's body (voice, gestures), it clearly seemed less relevant, if not irrelevant, to written composition than the other canons (particularly *dispositio* and *elocutio*). By the time of 20th-century rhetoric theory and composition pedagogy, delivery had effectively disappeared. It is seldom taught in departments of Writing, English, or Communication.

With the emergence and, now, ubiquity of Internet-based communication, it is long past time to revive the rhetorical canon of delivery. Not your father's Oldsmobile but an updated vehicle, an expanded and retheorized notion of delivery designed for the distinctive rhetorical dynamics of Internet-based communication. "Internet-based communication"[1] is of course not a monolithic,

[1] What is significant about "Internet-based communication," in terms of rhetoric and written production, is not the computer per se, but rather the internetworked computer and the kinds of social networks and rhetorical dynamics it promotes. As Porter ("Why Technology") argues, "the computer per se is not

well-defined thing: it is a range of media, technologies, rhetorical venues, discourse genres, and distribution mechanisms — everything from online discussion forums to news outlets to academic journals to shopping malls to museums to simulated game and lifeworld environments to wikis to blogs and so on. There is considerable rhetorical difference between a wiki, a blog, an email discussion list, and a synchronous chat room — and there are considerable ethical, editorial, and political decisions involved in setting up and maintaining any of these types of forums. And that is just one example of why we need a robust theory of digital delivery to help us navigate these kinds of rhetorical complexities. Understanding how the range of digital delivery choices influences the production, design, and reception of writing is essential to the rhetorical art of writing in the digital age. Rhetoric theorists need to understand this point, as do HCI (human-computer interaction) designers, as the point pertains in fundamental ways to web-based writing and communication.

My audiences for this paper are (1) rhetoric scholars and, more generally, humanist scholars, for whom I would like to highlight the importance of technical knowledge as a legitimate form of humanistic thought; and (2) HCI (human-computer interaction) designers, web authors, and professional/technical writers, for whom I would like to emphasize how rhetoric theory and critical, humanistic thinking contribute value to web-based production and design. Each audience can learn much from the other.

This paper is divided into two main parts. In Part 1, I overview the history of delivery in the realm of rhetoric: What role did delivery play in historical rhetoric? What happened to it — theoretically, pedagogically, politically — and why? In Part 2, I outline a theory of delivery for digital rhetoric.

This theory of "digital delivery"[2] has five components:

- *Body/Identity* — concerning online representations of the body, gestures, voice, dress, and image, and questions of identity and performance and online representations of race, class, gender, sexual orientation, and ethnicity

- *Distribution/Circulation* — concerning the technological publishing options for reproducing, distributing, and circulating digital information

- *Access/Accessibility* — concerning questions about audience connectedness to Internet-based information

- *Interaction* — concerning the range and types of engagement (between people, between people and information) encouraged or allowed by digital designs

- *Economics* — concerning copyright, ownership and control of information, fair use, authorship, and the politics of information policy

These five components are more than merely subject area domains, abstracted topics, or technical proficiencies. Rather, think of these as the common topics (*koinoi topoi*) of delivery —

the revolutionary technology. Rather the revolution is the networked computer and the social/rhetorical contexts it creates and the way its use impacts publishing practices. All *that* is revolutionary. The impact on social networks and publishing practices represents a significant change" (384-385). See also the WIDE Research Center Collective notion of Internet-based communication as "digital writing": "When we use the term 'digital writing,' we refer to a changed writing environment — that is, to writing produced on the computer and distributed via the Internet and World Wide Web. We are not talking about the computer as a stand-alone machine for writing; although that particular technological development has indeed changed the writing process, the computer itself as a stand-alone machine is not revolutionary in the sense we mean. Rather, the dramatic change is the networked computer connected to the Internet and the World Wide Web. Connectivity allows writers to access and participate more seamlessly and instantaneously within web spaces and to distribute writing to large and widely dispersed audiences."

[2] What I am calling "digital delivery" could also be identified by an older term in the field — "electronic publishing" — but I am not talking about "publishing" only in its mechanical aspects. This expanded notion of delivery takes up issues of the politics and economics of publishing — and that includes, but is not limited to, issues of authorship, copyright, fair use, digital economics, and copying, distribution, and remixing of digital material — aka, filesharing.

i.e., categories that operate heuristically and productively across multiple situations to prompt rhetorical decisions regarding production. In short, they help you write. For example, under the common topic of "access," demographic information about your audience's degree of access to broadband Internet should serve the productive purpose of guiding the format you as a writer or web designer use to deliver information. Indeed, you might offer multiple formats for audiences with restricted vision (and who are rendering digital information via screen reading programs) or for audiences who have limited (or no) access to broadband connections. If you produce a web page, you should use CSS (Cascading Style Sheets), an approach to design that separates out formatting elements from informational content to increase accessibility by, for instance, blind persons or persons using handheld devices to read the information.[3]

Technical knowledge about distribution options — i.e., how audiences are likely to access, engage, and interact with information — pertains in critical ways to rhetorical decisions about informational content, design, style, etc. In short, technical knowledge is integral to the art of rhetoric, and to the canon of rhetorical delivery, in the digital age. As Kathleen Welch ("Electrifying") argued over 18 years ago, "The fifth canon [delivery] … is now the most important of the five." Now more than ever.

PART 1. Delivery Then Some Historical Antecedents

In classical Greek and Roman rhetoric, delivery referred primarily to oral delivery: to making a public speech on political, juridical, or ceremonial occasions. Aristotle did not evidence much respect for delivery in *Rhetoric*, treating it only briefly (*Rhetoric* 3.1-3.7). He saw delivery functioning "in the same way as acting … a matter of natural talent and largely not reducible to artistic rule," except insofar as it relates to "how things are said [*lexis*]" (3.1.7). As Sunkowsky points out, Aristotle viewed delivery as an afterthought, "merely something which is added in a superficial way in the performance after the artistic labors of composition have been completed" (258).

Aristotle provided the dominant cue for Western thought in regards to the canon of delivery: that is, delivery does not require "artistic labors" — ergo, it is not that important. But his students and later Roman rhetoricians afforded delivery considerably more attention, along two lines in particular: (1) emphasizing the role of the body in rhetorical action, and (2) stressing the importance of emotional impact. For instance, the author of *Rhetorica ad Herennium* regrets the lack of attention to delivery and argues for its importance: "[B]ecause no one has written carefully on this subject ... and because the mastery of delivery is a very important requisite for speaking, the whole subject, as I believe, deserves serious consideration" (*RaH* 3.19). Written circa 84 BCE, *Rhetorica ad Herennium* offers specific advice about how voice and body pertain to persuasive impact, noting how different occasions call for different strategies. For example, the rhetor can achieve an emotional effect by using "a restrained voice, deep tone, frequent intermissions, long pauses, and marked changes" (*RaH* 3.25); however, for sustained debate it is better for the rhetor to use "a quick gesture of the arm, a mobile countenance, and a keen glance" (*RaH* 3.27).

Aristotle does not say very much about delivery in *Rhetoric*, but, as Sunkowsky notes, his students Theophrastus and Cicero viewed delivery as an important component of emotional — and, therefore, persuasive — effect: "Cicero revived the study of the emotions and gave new life to the theory of delivery" (Sunkowsky 273). In contradistinction to Aristotle, Cicero sees delivery as critical to rhetorical effect, as he discusses in *De oratore* (3.213-27). Sunkowsky argues that in Cicero "the techniques of delivery are not merely something that is added in a superficial way after the process of literary composition has been

[3] When you author your web pages in CSS, you are increasing the accessibility of your information to a wider variety of readers. Standards for the design of web pages now insist that content needs to be separated from form — so that content can be delivered in a variety of forms. As Scheuhammer argues, "From an accessibility point of view, there is a need to design hypermedia content in a way that allows someone with a disability (e.g., blind) to interact easily with that media. From a general interface point view, there is a need to design hypermedia content in a way that allows it to be presented on a variety of different devices, with different capabilities."

completed, but something that is vitally involved in the very labors of composition anticipating the public presentation" (273). Cicero's treatment acknowledges the important relationship between performance (bodily, tonal) and persuasion.

In *Institutio oratoria*, written in the first century CE, Quintilian provides a detailed discussion of delivery (11.3), focusing mainly on voice and bodily movement: the quality of voice, the position and carriage of the body (including discussion of hands, neck, eyes, head, and, interestingly, dress), as both relate to the emotional force of the oration. Quintilian advises (and as my older daughter often tells me), being overdressed is as bad as being underdressed: "excessive care with regard to the cut of the toga, the style of the shoes, or the arrangement of the hair, is just as reprehensible as excessive carelessness." (For a job interview do you wear a tie, a dress versus dress pants, makeup versus none? Should you cover up your tattoos?) But Quintilian's discussion of delivery is not detached from other rhetorical considerations. Quintilian notes the important connection between delivery and the character of the speaker (*ethos*) and the emotional depth and appeal of the presentation (*pathos*). Delivery relates to persuasive force. For example, a demeanor exuding modesty can be persuasive with judges in a legal matter, just as much as "a toga sitting well upon the shoulder," but it only achieves the desired effect if the emotion is sincere, the facts are compelling, and the argument sound: "All emotional appeals will inevitably fall flat, unless they are given the fire that voice, look, and the whole carriage of the body can give them" (11.3). The point here is that the body is an integral part of rhetorical action. The sincerity of one's commitment and the appropriate coordination of one's thoughts, feelings, and bodily expressions are important to rhetorical effect.

Fast forward to the early Renaissance. In *The Treasure of the City of Ladies* (1405), Christine de Pisan provides a similarly comprehensive perspective on rhetorical delivery — a holistic view of how the princess or "noble lady" ought to conduct herself in court. de Pisan does not carve up the canon like Aristotle does — i.e., she does not distinguish between invention and style, delivery and audience. She does not create an elaborate classification system or outline of the art of rhetoric. Rather, de Pisan's rhetoric is a different kind: it focuses on the whole person, covering the speech, the demeanor, the tone, the ethical stance and moral obligation, the dress, and the behaviors holistically. de Pisan's view is an integrated view of rhetoric and the body that we do not often see represented in the Western rhetorical canon, or at least not the academic canon. Until relatively recently, de Pisan's work was not treated as a serious rhetoric treatise because it is not the abstract and philosophical type (like Aristotle's); it does not proceed via an elaborate classification system. Historically it was dismissed, disregarded, neglected as a conduct book, a mere etiquette guide, when in actuality it might well be one of the few historical examples we have of a wholly integrated rhetoric — one that considers the rhetoric of the entire person, not only what she says, but how she behaves, dresses, gestures, and, importantly, interacts with others in complex political settings.

The emergence of the printing press in the 15th century represents a key historical shift in the canon of delivery. Elizabeth Eisenstein's highly regarded book *The Printing Press as an Agent of Change* describes the immense impact of the printing press on Western intellectual, scientific, and religious thought. I view Eisenstein's work as an important treatise on delivery: how a mechanical copying mechanism (the printing press) can effect vast rhetorical, political, social, and cultural upheaval. Eisenstein describes the revolutionary effects of the printing press in Western European culture during the 16th and 17th centuries. She stops just short of saying that the printing press *caused* the Protestant Reformation — but not that far short. Not only did the printing press play a significant role in distributing and promoting religious ideas in the 16th century, she points out that the ability of print to collect, perfectly replicate, and widely distribute common sets of mathematical and scientific data enabled yet another revolution, the rapid growth of scientific thought in the 17th and 18th centuries. The technological shift from scribal to print culture was not a mere technical or instrumental shift from one form of delivering knowledge to another. The new form of delivery *changed knowledge itself*; it changed the parameters, procedures, and locus for what constituted religious truth and scientific knowledge; it changed who had the right to create, promote, and distribute knowledge, giving power to a wider

range of voices (including voices of religious protest). Eisenstein points out that print enabled "typographical fixity … a basic prerequisite for the rapid advancement of learning" (78). "Fixity" was particularly important for the advancement of science, as this enabled the standardization and wide distribution of mathematical and scientific knowledge: "the development of neutral pictorial and mathematical vocabularies made possible a large-scale pooling of talents for analyzing data and led to the eventual achievement of a consensus that cut across all the old frontiers" (269). Print helped both (a) to establish a fixed archive of scientific knowledge and (b) to distribute that knowledge widely. The result was a pooling of scientific knowledge the enabled later discoveries.

But we do not typically use the term "delivery" in connection with the history of print publishing. Delivery as a term was associated exclusively with speech, not with print. Delivery was a dominant concern of the much maligned English elocutionary movement of the 18th century, with its excessive (some might say, obsessive) focus on correct pronunciation and usage, as well as with decorum — the correct posture, stance, and gestures of the orator. Some works, like Gilbert Austin's *Chironomia; or the Art of Manual Rhetoric* (1644) even provided elaborate diagrams of how to hold your hands and arrange your fingers in order to make a point. Here is where the art of delivery became degraded. Delivery techniques became disconnected from rhetorical considerations such as emotional effect on audience (as in Quintilian) or ethical and political action (as in de Pisan).

Understanding Rhetoric and Delivery as Art (*Techne*)

Why rehash rhetoric history? What possible value can this history have for HCI studies? These past treatments, categories, and classifications — particularly the systems of Greek and Roman classical rhetoric — persist. They have an enduring power and influence over our categories of thought, our systemic classifications, our vocabularies, our ways of thinking about writing, technology, and production. Whether we know it or not.

Let's start with the word "technology" — probably the #1 god term of the digital age — a term carrying considerable historical baggage. For starters, that single word contains two key concepts from classical Greek rhetoric: *techne* and *logos*. I will not attempt to tackle the concept of *logos* here, but I will briefly examine *techne*, an important notion for understanding the art of digital delivery.

Techne is often translated as "art," but we have to understand that term differently from our contemporary notions of art as the aesthetic, imaginative works of "artists." In the classical Greek rhetoric and philosophy of Aristotle and Plato, *techne* represents a kind of knowledge: "first of all, *techne* is a pure knowledge of form or standard" (Wild 257), a matter of bringing form to material in order to make something. But the made object has a purpose: "the work of each art is accomplished for the sake of something" (Wild 259). The true artist has a sense of effect: what work or result the made object will have in the world. *Techne* requires both an abstract knowledge (e.g., of material and of form) and a procedural knowledge (e.g., of application and technique). In short, it requires both theoretical understanding and practical know-how working in tandem. As Wild points out, Plato distinguishes *techne* from *tribe*, "meaningless repetition of practice" (264), i.e., routinized mechanical procedures lacking insight. In other words, in our own vocabularies "technical" should be distinguished from "mechanical."

Rhetoric, as *techne*, is the art of creating discourse, whether speech or writing, to achieve a desired end for some audience. Like all arts, it can be practiced badly or well. It becomes degraded when it is taught or practiced as a set of mechanical procedures, rules or formulas to be followed or patterns to be copied. It achieves status as a true art when it taught and practiced as form of knowledge involving a critical understanding of the purposes and effects of the art on audiences and the practical know-how to achieve those effects in new discursive situations. To apply this point to digital writing, merely knowing the mechanics for coding web pages using CSS (Cascading Style Sheets) is not sufficient to the art of web authoring in the digital age. Rather, the writer/designer needs to know how to use these procedures to achieve the desired effect

— for example, distributing useful information to readers, and doing so in a readily accessible way.

What I see in too many tutorials, manuals, and workshops on web design is a degraded form of rhetoric — i.e., the reduction of the art to routinized procedures, abstracted from context, without the full comprehensive *techne* kind of knowledge, which includes knowledge and understanding about audiences, effects, and choices. That is one kind of fallacy — a type of instrumental fallacy. However, I often see humanist academics committing a different kind of fallacy: dismissing technical knowledge too readily as mindless mechanics, failing to see the importance of technical know-how to rhetorical competency. One cannot be an effective digital writer without knowing both technical procedures and how to deploy them to achieve the desired end. The *techne* for digital rhetoric includes both technical/procedural knowledge and knowledge of audience and effect.

Techne is a productive knowledge: a knowledge of how to make things (including discourses). It is not a static knowledge, but an art-ful knowledge of how to make, in the case of discourse, an effective persuasive speech or piece of writing. This form of art is not rule-governed or mechanical. It requires a critical understanding of how to apply the art to new topics, new audiences, new situations (Lauer 49). There is a critical judgment involved in this art: knowing how to apply general principles and past experiences to specific new cases to construct discourse that will result in effective communications. Critical to writing/designing in the digital age is understanding the technologies of writing, not merely know-how in the sense of mechanical production skills but rhetorical knowledge, a digital *techne* or critical art requiring both critical judgment and technological know-how working in conjunction.

My point in reviewing the role of delivery in historical rhetoric is not to revive classical delivery or speech delivery at all, but rather to point out that the art of rhetoric has traditionally included delivery under its umbrella — although sometimes a diminished version of that canon, not always a robust form. The principal reason to resuscitate delivery is a productive one: a broad conception of delivery can aid invention, as well as the design and evaluation of writing. It is of particular importance to audience. A robust canon of delivery should help us think more productively about how we are writing, and to whom, and lead us to make smarter choices as writers/designers producing online information. In Part 2 of this paper, I provide some examples of what I mean by that.

Why Did Delivery (and Memory) Disappear?

When rhetoric shifted its focus historically to writing, the canons of delivery and memory became subordinated. By nature of its permanence, writing seemed to have little need for an art of memory. Similarly, delivery was seldom taught per se as an art of composition, because it seemed to be a material, technical, and economic concern more relevant to publishing than to writing per se. Never deemed all that important compared to other canons, delivery had dropped off the map by the late 20th century. Delivery was seldom taught in composition classes[4]; it was certainly not regarded as a subject worthy of research.

Kathleen Welch argues that the disappearance of memory and delivery was by no means a "benign removal" (*Electric* 144). She does not see it as the logical outcome of the historical shift toward written discourse; rather she sees it as a "rigorous suppression" (149), part of the overall narrowing of the definition of rhetoric to mean, mostly, "attenuated style or language decoration" (150). She points out that for many non-Western cultures — for example, Native American culture — memory and delivery are fundamentally important rhetorical canons (147). Erasing or diminishing the role of memory, for example, is a way of devaluing the contributions of cultures that honor ancestral knowledge and see it as wisdom to be preserved, carried forward, honored, and learned in a deep way — that is, by being brought into one's soul, into the essence of one's being, as part of character formation. In the world of computer technology "heritage systems" are viewed as a problem to be solved rather than as something to

[4] As Reynolds ("Rhetorical Memory") points out, "In composition studies, the first three canons — invention, arrangement, and style — are used to organize the materials presented in the vast majority of the textbooks, but the last two — memory and delivery — are typically ignored or, worse, deleted without a word of explanation" (3).

be preserved. We do not have to remember because our machines do it for us in RAM. We can simply do a Google search and then copy-paste "knowledge" into our writing without bothering to remember or assimilate that knowledge in any deep sense. Of course that assumption misses the point about the relationship between memory, cultural values, and character formation: memory in this deeper sense involves assimilating certain forms of the past and of one's cultural heritage as a critical stage in identity and character formation.

While I do not intend to consider the canon of memory in any detail here, I do see the importance of recovering memory as similarly critical for rhetoric. As with the canon of delivery, memory became historically narrowed in Western rhetoric. It came to be associated principally with mnemonics (how to memorize a speech). But a broader notion of memory would see it as involving the recovery, preservation, and revitalization of artifacts, cultural knowledge, heritages, and traditions because they are important to the identity formation of the rhetor and to the inventional production of discourse. A broad conception of memory would include the aspects of:

- *recovery/restoration* —> of missing and lost works, rhetorical traditions and arts, cultural artifacts; culture and language recovery; "re-memory" on an individual as well as cultural level (e.g., recovering one's own lost stories or suppressed memories). In the field of rhetoric, scholars such as Victor Villanueva and Malea Powell have focused on this aspect of the canon of memory. Much historical work in rhetoric has involved recovering rhetorical traditions and practices that were erased, suppressed, and neglected by the dominant European-Western tradition.

- *preservation* —> archiving, tracking, and storage of works to ensure long-term survivability and access. Though rhetoric scholars do not often focus on this aspect of memory, preservation is a key concern for library and information science, particularly in regards to digital preservation. A canon of "digital memory" would bring into the composing process questions about survivability of documents, format and platform, technology obsolescence, licensing, caching, backing up, indexing, searching and meta-data, database management, version tracking, site migration, security, authentication, information integrity, etc.

As the above two-part classification makes clear, memory does not concern ancestral artifacts or suppressed cultural traditions only. Memory is a key concern for information science and, increasingly, for the field of healthcare in terms of the ability to retrieve and render patient information. The historical impetus toward erasing/suppressing the canons of memory and delivery is a way to subordinate the materiality of writing and the technical side of composition practice — that part of the art that has to do with material cause, with understanding the materials and tools for writing. Welch sees the shift in rhetoric toward textual formalism — i.e., toward a nearly exclusive focus on two or three rhetorical canons (arrangement and style, and perhaps invention) — as an ideological move toward an abstracted, theoretical-philosophical rhetoric that privileges written discourse over oral and visual; that privileges the modes of exposition and formal argumentation over expressive and narrative writing; that privileges logical and disinterested analysis over emotional response; that privileges empirically derived and rationalistic knowledge over ancestral, religious, and cultural knowledge; that privileges the disciplinary domains and methodologies of science and humanism over community or personal experience. This bias works to the detriment of women, people of color, and non-Western cultures.[5] It is a bias that privileges the contribution of the theorist over the practitioner. Reviving the canons of delivery and memory requires reviving skills and forms of knowledge and practice that traditional Western

[5] Kathleen Welch ("Interpreting") sees this bias as a deliberate move toward Aryanizing rhetoric: Westernizing, masculinizing, and whitening it. According to Welch, during the 19th and early 20th century Western scholars whitened and Europeanized (à la Western Europe) Greek philosophy and rhetoric, meaning that they erased and suppressed its historical and geographical context in the Mediterranean and its roots in African (particularly Egyptian) and Semitic cultures. They also idealized and celebrated classical Athenian culture as the basis for democracy — which required overlooking its subordination of women and reliance on slaves.

rhetoric and humanistic thought have seldom acknowledged or valued.

PART 2. Delivery Now

My intention here is not to provide a comprehensive theory of digital delivery, but rather (a) to outline what I see as the chief features of that theory — i.e., what I am calling the five *koinoi topoi* of delivery (body/identity, distribution/circulation, access/accessibility, interaction, economics); (b) to provide some examples of how each of these features can assist the art of rhetorical production, particularly the canon of invention; and (c) to cite some representative scholarship in each of these five areas. Much of this canon recovery work has already been done, particularly in the field of Computers and Composition.[6] In fact, I would dare say that most of the research published in the journals *Kairos* and *Computers and Composition* is related moreso to the canon of delivery than to any of the other canons — although scholars in that field seldom label their work as "delivery." What I am doing here is not so much creating a new theory of digital delivery as I am aggregating and coordinating a well-established body of research and scholarship under the rubric of "digital delivery."

Body/Identity

The body plays a key role in face-to-face oral delivery. As the classical Roman rhetoricians noted, the body is enmeshed in persuasive effect, particularly emotional impact. "The body" includes a number of features related to your identity — i.e., how you present in terms of gender, race, ethnicity, sexual preference, age, etc. It also includes your "performance" — i.e., your facial expressions, your gestures, your haircut (or absence of hair), your posture, your physical movements, your manner of dress, and your manner of speaking. These bodily features are significantly intertwined with your *ethos* as a speaker. I can achieve one kind of *ethos* by writing a newspaper editorial advocating labor union representation for Wal-Mart employees. However, I can also rhetorically perform in a different way by putting my body on the line: showing up at a pro-union protest in front of a Wal-Mart outlet carrying a sign, collaborating with others in the protest to create a street scene, a performance, that the media might well report — and thereby raise public consciousness about a labor issue. This public performance is also rhetoric: using the body as itself a "text," a delivery mechanism for a persuasive point.

The body does not disappear in virtual space. It is certainly constructed differently, but it is there in all its non-virtual manifestations: gender, race, sexual preference, social class, age, etc. Is it possible to "gesture" or create a bodily action online? Yes, of course, as we well know from the simplest and most well known of all bodily representations in online space: :). The smiley face emoticon is an ASCII textual representation of a bodily act that is used to add nuance to a piece of text. On a more advanced level, when I make an avatar in the simulated world of Second Life[7] I am creating a bodily representation of myself, one that may or may not correspond to my lifeworld self (I have the option of deciding that), but one that has a virtual bodily existence. That avatar is my virtual bodily self that, when combined with virtual speech and behavior, results in a rhetorical performance.

Numerous scholars have explored the bodily aspects of virtual space — particularly from the perspective of gender (e.g., Armstrong; Blair and Takayoshi, "Mapping"; Blair and Takayoshi, "Navigating"; Gerrard; Tulley and Tulley), race (e.g., Banks), sexual orientation (e.g., Alexander and Banks; Alexander; Rhodes), and ideological disciplining of the body (Porter, "Why Technology"; Selfe and Selfe). Feminist scholars like Gail Hawisher, Patricia Sullivan, and Susan Herring

[6] The field of Computers and Composition consists of rhetoric/composition scholars whose work focuses on the relationship between computer technology, rhetoric theory, and composition practice. The forums for this field include, for example, the journals *Kairos* and *Computers and Composition*; the Computers and Writing annual conference; the Hampton Press book series "New Dimensions in Computers and Composition"; and the techrhet email discussion list. The early history and development of this field are chronicled in the book *Computers and the Teaching of Writing in American Higher Education, 1979-1994: A History* (Hawisher, LeBlanc, Moran, and Selfe).

[7] Second Life is a "3D online digital world" located at http://www.secondlife.com/. As of March 2007, its population was approaching 5 million residents.

have pointed out that the Internet is by no means a neutral space where gender is invisible. On the contrary, Internet participants often take their gender identities into digital space with them: they can try to approximate their lifeworld gender identities, or they can create dramatically alternative identities in those spaces. As Hawisher and Sullivan discuss in their analysis of representations of women's bodies on web sites, the Victoria's Secret web site represents "the fantasy version of a desirable woman" (274), reproducing "the age-old stereotypical relations among the sexes" (274-275). The Victoria's Secret site (Figure 1) uses stereotyped images of women in provocative sexual poses á la the *Sports Illustrated* swimsuit issue to sell a product. (Note the verbal references to women as "angels" and "babydolls.") This site is developing these images to sell a line of products, and so there are sales-related appeals as well: "free shipping," "sales and specials," free merchandise with any purchase. Is the primary audience for this site men or women? (Good question.)

FIGURE 1. Victoria's Secret web site home page, at http://www.victoriassecret.com/

The Victoria's Secret site embodies the marketing cliché that "sex sells." However, academics' professional sites also attempt to market a product, albeit a scholarly "product" using different forms of appeal. The professional web site for the legal scholar Larry Lessig (Figure 2) is based on a professional *ethos* of scholarly competence, personal integrity, and civic concern. Through the use of mainly text and arrangement of information, a few photographs (mainly of his book covers), and links (with associated logos) to public action groups like Creative Commons and the Electronic Frontier Foundation, Lessig creates an online persona for himself: the scholar-activist who publishes legal research but who is also invested in civic action pertaining to Internet freedom and digital intellectual property. He does provide one personal photograph: standing with his arms folded, in a white shirt with rolled-up sleeves, in a kind of James Dean-like posture exuding nonchalant cool (but also studious). No suit here, he's not one of "them." Not the stereotyped image of the corporate lawyer, but rather an activist-lawyer-scholar.

FIGURE 2. Web site home page of Larry Lessig, at http://www.lessig.org

Compare Lessig's professional web site with that of another scholar, Donna Haraway (Figure 3). Haraway's site is a more conventional programmatic web site consisting mainly of descriptive textual information about her current work: her courses taught, her current research interests, information about how to contact her, and her academic credentials and affiliations. It emphasizes her affiliation with the Feminist Studies program at UC-Santa Cruz. Haraway does list her books in citation form, but does not provide descriptions of them or links to help you purchase them. She does not feature her upcoming speaking appearances, as does Lessig, or provide interactive tools like blogs and RSS feeds for readers to engage in discussion or to receive updates about her activities. She provides a photo of herself with a dog, a casual pose of her in blue jeans in a lush wooded setting. It is not the typical academic headshot at all, but a personal picture showing a warm side to her character. On both Haraway's and Lessig's sites, graphical representations of

their body are used to supplement information about their scholarly activity — chiefly by adding a personal touch and by exhibiting an attitude that helps to represent each's identity.

FIGURE 3. Faculty web page of Donna Haraway, at http://humwww.ucsc.edu/FMST/facHaraway.html

These web sites provide static graphic representations of the body (photographs), but in the world of MMORPGs (Massively Multiplayer Online Role-Playing Games), virtual bodies actually move in 3D environments — for example, in game worlds like EverQuest and World of Warcraft and in simulated worlds like Second Life. People can create their own avatars and thereby represent themselves in terms of the names they choose, their manner of dress, and their online performances (e.g., how they present in terms of race, gender, and sexual orientation; how they speak). There is a new generation of rhetoric scholars (e.g., Alexander; Bailie) taking principles of rhetorical and cultural analysis and critique into virtual worlds to understand the nature of the rhetorical dynamic in those worlds; to develop principles for written production within those spaces (e.g., principles for designing characters and for understanding conventions and ethics of the simulated world); and/or to understand the relationship between RL and VR (Real Life, Virtual Reality).

It is not only the visual body that is recovered in virtual spaces. The speaking body is also recovered, as numerous scholars have pointed out (including Andrea Lunsford, Tara Rosenberger Shankar, Heidi McKee, Jeff Rice, and Scott Halbritter). Voice and aurality are a central concern in digital rhetoric, as the World Wide Web supports multimedia discourse that enmeshes textual, video/visual, and aural elements. In digital spaces we have to consider not only textual presentation but oral performance, the very qualities of voice that were central to classical rhetoric. As VoIP services (Voice Over Internet Protocol) become more prevalent, the speaking voice will become an even more important feature of online worlds and games, and that will add yet another level of complexity to the rhetorical dynamic of such spaces. Will typed textual discourse disappear once VoIP becomes fully integrated? No, but its role in the rhetorical dynamic is certain to change as it becomes intertwined with voice and virtual bodily movement.

The traditional humanist approach to technology draws a firm line between the human and the machine, but this approach fails to appreciate the compelling power of virtual life and communication. A more promising approach, articulated by Katherine Hayles and others, is the posthumanist approach to technology. The posthumanist approach begins with Donna Haraway's [1991] notion of the cyborg: a hybrid metaphor that challenges the human–machine distinction and questions conventional body boundaries and notions of the writer as purely human. A posthumanist approach explores cyborgian hybridity, the connectedness between human–machine. Such an approach begins by recognizing that "there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals" [Hayles, 1999, p. 3]. In effect, "we are all. . . cyborgs" [Haraway, 1991, p. 150] (Porter, "Cyberwriter").

The posthumanist approach views the human body and technology as merged in a new hybrid form: the cyborg. If we are thinking in terms of human communication, the cyborg is an especially useful metaphor, as I have previously argued (Porter, "Why Technology"). The machines that we use to write and speak are closely merged with our flesh-and-blood bodies, if you think about how we are connected to our cell phones and our computers, thanks to the development of mobile and wireless technology. The phone can now be with us at all times, even attached to our ear. But we are also typing text messages into those

phones. We are also re-creating our bodies in cyberspace, as we create characters to represent us (who we are, or who we would like to be) and rhetorically perform in virtual space. In 1990 our online rhetorical performances were mainly textual, as we typed our communications and sent them via email. The smiley face icon (and its derivatives) was our limit for bodily/facial expression. By 2000 the World Wide Web had required us to think more visually about our communications and about how we represented ourselves graphically in photos. And now we must think cinematically and aurally as well. Digital rhetorical performance is becoming increasingly multimodal and increasingly synchronous.

Although it might seem that these virtual environments exist mostly for the sake of game playing, entertainment, and, yes, virtual sex, that is only the first-generation version and popular representation of such environments. These virtual worlds are already becoming spaces for business transactions, for legal consultations, for political activity, for community support groups, and for training and education.[8] Game playing worlds and "second life worlds" are environments supporting a wide variety of human interactions. We need a robust rhetoric of digital delivery to understand how to be an effective rhetorical participant within these environments.

Distribution/Circulation

When you arrange a lunch appointment with a colleague, you decide how you are going to contact her — by phone, by email, by dropping by her office and asking her face-to-face. Your decision is based on contextual factors, including proximity to her in time and space and the immediacy of the appointment (Is her office close to yours? Is she there now? Is the lunch for next week, or next hour?), as well as knowledge about user preferences (Is she OK with phone calls at home? Is she a regular email user?). If you know that your colleague only occasionally checks email, and it is thirty minutes before lunchtime, then email is probably a poor choice for distributing your message. If you want to effect a felicitous outcome — one that results in you and your colleague actually meeting for lunch — then you reflect on this question of message delivery. Your reflection might take eight seconds — i.e., it is a brief, nearly instantaneous decision — but the choice of distribution matters to the success of the communication.

Digital distribution refers to rhetorical decisions about the mode of presenting discourse in online situations: What is the most effective way to distribute a message to its intended audiences, in a timely manner, and in a way that is likely to achieve the desired outcome? Circulation is a related term that pertains to how that message might be recycled in digital space (should you want that to happen).[9] When you add a phrase like "Please feel free to re-post this call for proposals" to an email announcement, you are signaling to readers that you want broad circulation of your message. Distribution refers then to the initial decision about how you package a message in order to send it to its intended audience. Circulation refers to the potential for that message to have a document life of its own and be re-distributed without your direct intervention. You can design your discourse to achieve a high degree of circulation, or you can design it to limit circulation, depending on your wishes.

When I have to decide whether to send an article manuscript to the print journal *College Composition and Communication* (*CCC*) or to the online journal *Kairos* (both well-respected, refereed journals in the field of rhetoric/compositon), I am making a *techne* decision regarding delivery, distribution, timing, and audience impact. If the article is accepted for publication in *CCC*, then I will wait probably two

[8] For example, the Ink project at Michigan State University (http://writing.msu.edu/ink/) is a virtual game world that has as its primary purpose fostering a community of writing and promoting and teaching effective writing. The "Serious Game Design" MA at Michigan State University is a graduate program founded in 2007 to teach game design "with a purpose beyond entertainment, including but not limited to games for learning, games for health, and games for policy and social change" (http://seriousgames.msu.edu/).

[9] I am indebted to Doug Eyman (2007) for helping me appreciate the relevance of the distinction between "distribution" and "circulation" — a distinction noted by Karl Marx but remediated here for application in the realm of Internet communication. Although Eyman's framework for understanding circulation is different from my own, his 2007 dissertation provides a detailed and valuable analysis of the concept of the circulation and analyzes techniques for tracking circulation in digital space.

years for that article to appear (that's bad), but it will be read by a broad cross-section of rhetoric/composition scholars and teachers (that's good). If the article appears in *Kairos*, it will come out sooner (perhaps six months), but its audience will be different (more technorhetoricians, scholars and teachers already invested in teaching in online environments). Making this distribution decision requires understanding the relationship between my article and possible audiences, and knowing which publication venue is more suitable given the focus of the article and what kind of impact I want it to have, and *when* I want to have it. Timing is a particularly important consideration — the *when* of rhetorical performance. The rhetorical term *kairos* refers to timing, to the right and appropriate time to deliver a discourse but also to the appropriateness of the discourse for its occasion (its audience, its immediate context, its historical and cultural context). It is a key concept for rhetoric in general, and for the canon of delivery in particular.

The field of rhetoric/composition has, to its credit, emphasized written production or process: how the individual writer creates a piece of discourse. Literary scholars have traditionally focused on textual meaning: what a particular piece of writing says and means. However, neither field has sufficiently taken up questions of distribution or circulation, as John Trimbur has noted:

> Neglecting delivery has led writing teachers to equate the activity of composing with writing itself and to miss altogether the complex delivery systems through which writing circulates. By privileging composing as the main site of instruction, the teaching of writing … has largely erased the cycle that links the production, distribution, exchange, and consumption of writing.[10] (Trimbur 189-190)

A focus on distribution can change how one configures writing projects. Often academic assignments are couched in terms of genre: "Write an essay or research paper on X topic" or "Create a web site that links to informational resources related to X topic." However, in the realm of professional writing, assignments usually do not begin with genre; they are more likely to start with considerations of client/audience needs. For example: The State of Michigan needs to provide information to the public about how to register to vote: should the State use print materials, online information, or a combination? Planned Parenthood wants to help young women be informed about their options and rights in regards to contraception, abortion, and reproductive healthcare: what is the best genre and distribution mechanism for making sure young women receive this information and are informed and persuaded by it? In cases like these, the delivery question follows from, it does not precede, questions regarding rhetorical intention and audience: What is the best distribution strategy for providing voter registration information to the public? Should we create a web site, a print flyer, a press release, a newspaper ad, or some combination of all the above? How do we reach audiences that do not regularly use the Internet or who do not even own a computer? How do we inform audiences who have difficulty reading print materials? Here is where questions of delivery, and also design of information, intersect with audience analysis. You have to understand who your audience is, and how they access information, in order to figure out the best distribution mechanisms for communicating with them. The question of distribution on the writer side of the process pertains to the question of access on the audience side of the process (to be discussed in the next section).

When I first distribute a digital document, I usually send it to a single designated location, or perhaps a few locations, for "publication." However, to what extent do I want that document to circulate, to be recycled, reused, and reshipped? If I want a high degree of circulation, then it is important to understand the technological and rhetorical procedures for helping that document cycle in digital space. If I send that document as a Word file or PDF, I have already limited its circulation potential on the Internet. I may indeed want to "freeze" the document in a given format and restrict circulation. Sending it as a PDF is an excellent way to do that. However, if I want to encourage broad circulation, I would write the

[10] In using the terms "production," "distribution," "exchange," and "consumption," Trimbur is invoking Marx's terminology from *A Contribution to the Critique of Political Economy*, written in 1857. In Marx's economic system, the terms referred to the production of manufactured products, but a number of scholars (including John Trimbur and Douglas Eyman) have applied this terminology to information products.

piece in HTML and make sure to include appropriate meta-tags — that is, keywords embedded in the HTML code — visible in the code but invisible in the rendering of that code on the web — that will assist searchers in locating that article. If I want broad distribution of a video I have created, I load it on YouTube and make sure that it is tagged with keywords that will invite viewing. If I want an online article to be shipped easily across a variety of digital formats, then I make sure to divide the content from the format — i.e., I design the writing using CSS (Cascading Style Sheets), an approach to web authoring that separates the format file from the content file. Why do that? Because that enables the content to be shipped easily to different formats — say, for example for display on a PDA screen[11] or for easier rendering by a screen reader that will translate textual information into audio format for users with sight or reading disabilities. I can attach a Creative Commons license to my document — say, an Attribution-Noncommercial-ShareAlike license[12] — that will clarify for users how they can use the work. I can license the work to encourage others to reuse and redistribute it, but disallow commercial uses and insist that my authorship of the work be credited. How I design the work, license it, and tag it — and the location(s) I choose for its original distribution, and *when* I distribute it — all these matters play a part in determining the circulation potential for that digital document. In the print realm, such matters are typically handled by publishers and editors — along well-established axes of distribution (e.g., academic journals get shipped to libraries and individual subscribers). For a print journal article, I submit my typed, doublespaced manuscript and let the editors and publishers worry about distribution and circulation. In the digital realm, online writers need to become rhetorically smart *distributors* as much as *producers* of discourse.

[11] PDA stands for "Personal Digital Assistant," a small handheld computer or a cell phone with Internet capabilities.

[12] Such a license signals to others than they can "remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms" (http://creativecommons.org/about/licenses/meet-the-licenses). In short this license encourages remixing and promotes sharing of remixed products.

Access/Accessibility

Numerous scholars in the field of computers and composition have addressed the question of access (e.g., Adam Banks; Grabill; Moran; Annette Powell; Selfe et al.), but beyond identifying (and regretting) the problem of inequity of computer resources, what can a writer or designer do about that? As Charles Moran says, "the rich have more, the poor less" (215), but how does one approach the problem proactively? Moran does make some recommendations for university teachers, who can address the inequity problem locally by, for example, advocating "less-expensive equipment" (218) and insuring that computer-based writing curricula do not disadvantage the students with less or no access to computers. Such a strategy begins by challenging some of the technology policies and decisions that contribute to lack of access for many: teachers can be advocates for open-source software applications rather than costly proprietary applications; they can design writing assignments to make use of less expensive or free applications; they can teach students to be creative producers using less expensive tools (e.g., using Google docs, a free collaborative authoring tool, for team projects).

But this approach addresses the needs of a small and relatively privileged segment of society: those with the educational background and resources to attend universities. Outside the university, the problem of access is severe: the absence and inadequacy of computer resources and the lack of an adequate network infrastructure in homes, schools, and public places mean that large segments of the population cannot access and benefit from digital information. That problem is especially serious in the United States because, as government documents, news media, health information, public archives, and even public debate move into online spaces, people with limited access to those spaces are increasingly cut off from information and public debates and cultural knowledge vital to their health and well-being and necessary for their participation as citizens.

It is not enough to say that Internet usage is now "widespread," just because we have data that tells us that there are 200 million Internet users in the United States and that 68.8% of people in the United States have access to an Internet connection. Those grand numbers by themselves

mislead. The United States is near the top of the list of nations in terms of percentage of citizens with Internet access: 54.6% of the population has in-home Internet access. However within these generalized numbers lie some troubling socioeconomic differences. It is important to note that for those with household incomes of less than $30,000 per year, the level of Internet usage is only 55% (compared to 94% for those with household incomes over $75,000 per year). While the overall percentage of US residents using the Internet is going up, the gap between users and non-users is widening. 32% of American adults, or about 65 million people, do not use the Internet and not always by choice. Certain groups continue to lag in their Internet adoption, including Americans age 65 and older, African-Americans, and those with less than a high school education (Fox, 2005). The most recent data collected by the Pew Internet & American Life Project show that, as of June 2007[13],

- only 32% of Americans over age 65 use the Internet
- only 62% of black Americans use the Internet (compared with 73% for whites)
- only 40% of those who have not graduated from high school use the Internet (compared with 61% of high school graduates and 91% of college graduates)

A large number of US citizens have *no* Internet access, and a large number have uneven or irregular access. According to a 2003 Pew study, many citizens are "truly disconnected": "some 24% of Americans are truly offline," and the majority of those (56%) have expressed no intention of ever going online (Lenhart et al).

We also have to think about variations in degree of Internet access. Only 42% of US users have broadband Internet access at home — and African-Americans and Hispanics have much lower than average rates of broadband access (US Department of Commerce). As design of Internet information becomes increasingly multimodal (i.e., incorporating audio and video), the question of level of access becomes more important. Even if a poorer household has modem access, without broadband access that household is not able, practically speaking, to access certain forms of information that are presented only or mainly in multimedia formats. Many rural Americans "continue to be left without Internet access" (Free Press), as the percentage of rural users with Internet access (and, particularly, broadband Internet access) is considerably less than for their urban and suburban counterparts. The user groups that perhaps have the lowest levels of Internet access in the United States are Native Americans (particularly those on rural reservations) (Tristani; Twist) and disabled persons, a group that includes a wide variety of types of physical disability (Lenhart et al).[14]

It is important to distinguish between "access" and "accessibility," overlapping terms that nonetheless refer to distinct spheres of concern. "Access" is the more general term related to whether a person has the necessary hardware, software, and network connectivity in order to use the Internet — and to whether certain groups of persons have a disadvantaged level of access due to their race, ethnicity, socioeconomic status, gender, age, or other factors. "Accessibility" refers to the level of connectedness of one particular group of persons — those with disabilities. Accessibility should be treated as a key rhetorical principles pertaining to audience, as John Slatin advises:

> In the end, accessibility is about rhetoric. Rhetoric teaches us that we have to know our audience to communicate effectively; taking accessibility seriously into account means expanding our sense of who's in the audience so that it includes people who have disabilities — people who are blind, people who are Deaf, people who are hard of

[13] For purposes of this survey Pew defines "use" as an instance of someone using the Internet or sending/receiving email "at least occasionally" (Pew).

[14] In a 2005 *Technical Communication* article, Theofanos and Redish stressed the importance of designing online information for blind and "low-vision users" — a category that includes a large number of people (about 7.7 million people in the US alone), and a category that will include almost every person at some point or other in their lives. Many users cannot fully access multimedia or animation on the web: people with hearing disabilities need captioning or transcripts for audio content; people with vision disabilities need descriptions of video content.

> hearing, people who have dyslexia, people who have cerebral palsy, people who have muscular dystrophy, people who have macular degeneration or diabetic retinopathy or traumatic brain injury, people who have carpal tunnel syndrome, people who have arthritis, people whose eyes are no longer as sharp as when they were 10 years younger, people who are victims of accident and war, people with conditions we've never heard of. (Slatin 161)

When you take into account the wide variety of disabilities, it is not hard to imagine that at some point in their life practically everyone has a disability of some kind, at least a minor one, and probably knows someone, or many someones, with a major disability of some kind. As Slatin argues, the goal should not be "simply to make online information and services accessible," but rather "to ensure that the world has access to the ideas and information that are generated by individuals who have disabilities, individuals whose sensibility and consciousness may be radically different from those whose voices are most commonly heard— people who may have valuable solutions to problems that face all of us" (161). In other words, the reason to write/design for accessibility is not only to allow people with disabilities to consume information, but to help them produce it.

It is easy to get daunted by the broad demographics of access: 65 million Americans are not on the Internet. There's not much I can do about 65 million people, but in terms of how I approach the process of writing/design, there is something I can do. A more proactive approach is to start by studying how audiences actually do use and access technology — and then to design systems that meet those people where they live and with tools that are available to them, in order to provide support for those people to enable their increased access.[15] It is a basic principle of audience analysis in rhetoric: Begin by understanding your audience — what it believes, knows, and has available to them in the way of resources.

From the standpoint of digital production, putting the concept of access into action means designing a project in a way that will help audiences with limited access to digital resources to engage that information via other media and formats. This could mean strategies such as promoting installation of computer resources in publicly accessible places such as libraries, government buildings, and kiosks; maintaining information in both print and digital formats; and designing information for access via mobile phones and other handheld devices. For instance, while a health clinic might move much of its patient information into web-based delivery systems, it should consider maintaining that information in print forms (and in robust forms of print distribution) so that lower income users can still access it.

Information can also be designed for distribution via devices other than expensive computers. Designing information for ready and usable access by mobile phones is another way to support access by a broader socioeconomic range of users — and also by users across the globe. From a broader global perspective, the Internet simply doesn't exist for much of the world. (Africa has a population of 900 million, 14% of the world's population, but only 1.4% of the African population has Internet access. India has a population of just over 1 billion people, of whom only 1.7% have Internet access.) The penetration rates for cell phone usage are in fact much greater than that for computers: e.g., Europe is

[15] Annette Harris Powell argues that it is important to approach access on the level of "actual practices" (17). As Powell points out, the issue of access for many is not so much access to physical technology (hardware, software) as literacy and social access — i.e., understanding about online rhetorical conventions and dynamics and how to negotiate them. Similarly, James Porter (*Rhetorical Ethics*) notes that "technical connectivity" is just one kind of access (that is, "access to technical resources and infrastructure, including level of technical connectivity (machines, Internet connection, bandwidth, software)." That type of access should be distinguished from both "use literacy" ("ability to use a variety of technical resources to meet needs") and "social/community engagement" ("ability to use technology to connect with people, to engage communities and groups, to participate in issues and topics of common interest") (102-105). Users certainly require access in the sense of technical connectivity, but that kind of access is not sufficient to ensure that users can fully engage and benefit from online information. They also need instruction and support for learning to use the tools (e.g., doing Internet searches via Google) and in finding, subscribing to, and participating in online forums that serve their needs (e.g., joining a political action group, accessing and contributing to the production of online community resources).

approaching 90% saturation (Reardon). Cell phone use in countries like India and China is far greater than is access to computers. (As of 2007, China had 487.4 million cell phone subscribers — or about 38% of the population [Data Group News Service].) However, these large figures can also mask problems of access: While Africa has 103 million cell phone subscribers, that is only 12% of the population. An even smaller percentage of the population has computer access.[16]

An emerging new area of web design — "mobile web design" (Gohring; Jones; Moll) — focuses on strategies for writing web-based information in ways that will make it readable via handheld devices, since for many users that will be the principle means of access to web-based information. Designing for access has long been an important consideration for web designers — certainly for ethical reasons of equity and fairness, but, increasingly, for economic reasons as well. The basis of long-tail economics is serving content for the small market niche — and doing that requires designing information for particular user needs. It has never been ethically fair, but it is now no longer economically smart, to design systems for some ideal "generic average user."

Designing for accessibility requires a certain kind of *techne* knowledge related to delivery. If I am given the technical writing assignment to "write a manual that helps people to set up their DVD player," the first thing I should understand is that the assignment is flawed. The instruction to "write a manual" confuses ends with means. It is confusing the formal aspect of *techne* (make an object, a manual) with the final goals of *techne* (help people use their DVD players). In Aristotelian terms, the assignment confuses formal cause and final cause. The question about genre should follow from, not precede, the question about audience. Traditionally, literary studies and even rhetoric have focused mainly on formal cause — e.g., the made poem or speech as a literary or rhetorical artifact. But focusing on delivery — and, particularly, emphasizing access and accessibility — means starting the writing process with audience and working backwards to made object. We might then rearticulate the writing task along these lines: "People need to set up their DVD players — and some of these people do not have access to the Internet, some are blind, some cannot read, etc. How do we help these people install their DVD players? What types of help do we offer?" Approaching the problem from the perspective of audience access/accessibility means starting with audience need — and with the diversity of audiences — and then developing a rhetorical approach (or, more likely, a variety of approaches) to address that need.

Interaction: Usable, Useful, Engaging/Compelling

Interaction, or interactivity, refers to how users engage interfaces and each other in digital environments. When I access my bank account using an ATM machine, for the purpose of withdrawing or depositing cash, the interface of the machine takes me through a series of steps aimed at, first, determining what I want to do, and then assisting me in accomplishing that particular transaction. The first step of the process is likely to be verification — determining that I am indeed a valid account holder by asking me to swipe my bank card and then enter the appropriate PIN number. The second step might be determining whether the interaction should be conducted in English or Spanish. The ATM transaction is a standard kind of human-computer interaction. Interactivity is professional area of expertise in its own right — called HCI, for human-computer interaction — one that requires skills in the design of computer interfaces, knowledge about how to test the effectiveness of such interfaces (aka, usability). HCI specialists design interfaces to enable user action, and, often, they test them as well.

However, here I want to consider the term "interaction" as a rhetorical quality pertaining (a) to how humans engage computer interfaces in order to perform various actions (e.g., withdraw cash from an ATM, post an entry to a blog); and (b) to how humans engage other humans through computer-mediated spaces. The fundamental principle of interaction is that different types of computer interfaces and spaces enable different forms of engagement — and the digital writer has a wide range of interaction options. Thus,

[16] "Only 1 out of every 250 Africans is an Internet user, compared to a world average of 1 in 35 people, or 1 in 3 in North America and Europe" (US Aid). Internet World Stats defines "Internet usage" as fulfilling two criteria: "(1) The person must have available access to an Internet connection point, and (2) The person must have the basic knowledge required to use web technology."

rhetorically, the writer needs to consider what kinds of designs will enable and encourage the kinds of audience interactions desired.[17]

Defining interactivity in terms of potential for audience involvement can help us imagine a broader range of human interactions with machines, systems, interfaces, and with other humans. The continuum in Figure 4 identifies four levels of interactivity — Access, Usability, Critical Engagement, Co-Production — that refer not to technical features of a digital product but rather to "interaction potential," or the range of possible human uses and responses to that product.

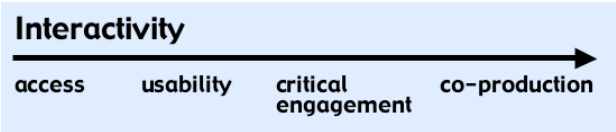

FIGURE 4. Interactivity Continuum

Most digital information actually falls into the narrow range of "usability" — ideally (when the information is well designed) people can access the information, read it and understand it, and perform whatever tasks successfully. While usability is certainly an important design criterion, it's not a particularly robust measure of interactivity. It positions the digital audience as passive consumers of digital content: Interactivity means pointing and clicking, through a range of limited and highly channeled choices — e.g., using an ATM machine to get cash or using Travelocity to purchase airline tickets. At this level, interactivity means pointing and clicking and watching, maybe reading and viewing, maybe inserting information into forms. Even well-intentioned educational programs and web style guides often tend toward this consumption model.

Most of what is advertised as "interactivity" on the web is technical bells and whistles — video animation, creative art, multimedia extravaganza, and fancy features designed to dazzle, impress, or wow users, to persuade them to consume or to collect rote information, but that don't actually allow the audience/user to do very much, at least not do in the sense of contribute, participate, or co-create (see Shedroff; Anderson). The user can choose or search or find or read or scan — or, most importantly, buy. Much new media work allows the user to gaze in awe. But in many cases the user isn't allowed to advise, create, or collaborate. Merely providing hyperlink choices or blank forms for inserting information should not be regarded as interactivity, and yet a lot of discussions (particularly in advertising and business contexts) define interactivity in precisely those terms. Merely giving readers options is nothing special. (The old print newspaper does that. So does a shopping mall.) Like choices on a multiple-choice exam, such choices are highly constrained, predetermined by the producer. Consumers are given the myth of choice rather than being allowed to generate their own options (Marion; Manovich 61).

Defining interactivity in terms of use, rather than by technical features, helps us imagine a broader range of human interactions with machines, systems, interfaces, and designs. What this continuum urges is more emphasis on more highly interactive forms of design (when appropriate of course — when I'm ordering airline tickets I don't want to be a co-producer), forms that critically engage the user and that even invite the audience to co-produce knowledge. The true revolution of the Internet lies at the right end of the interactivity spectrum — when users co-produce and become writers, when the distinction between audience and writer blurs. At this level, a site actively invokes the audience to become a co-producer of content. What social networking sites, video games, wikis, and simulated worlds are demonstrating is that audiences participate at an incredible level of engagement when the activity is meaningful and when the content is engaging and compelling.

Ann Wysocki's discussion of interactivity in her article "Impossibly Distinct" examines two types of interactivity in terms of their effectiveness in engaging readers. Wysocki does a close comparative analysis of two interactive multimedia CDs aimed at promoting art appreciation ("the Barnes CD" and "the Maeght CD"). These CDs both present a view of art to the reader/user, but they do so using very different hypertextual structures. Wysocki's close analysis — what she terms a

[17] Lucy Suchman ("Interactions") argues that "the term 'interaction" might best be reserved to describe what goes on between persons, rather than extended to encompass relations between people and machines" (see also Winograd). Shedroff defines interaction as "the art of effectively creating interesting and compelling experiences for others."

"phenomenological approach" — tracks her navigation, her choices, and her impressions as she moves through the CDs. She concludes that the Maeght CD offers a more nuanced hypertextual structure, one that credits the reader with more inventiveness and which encourages the reader to encounter the art works from multiple perspectives. The Barnes CD, on the other hand, overdetermines the reader's response, offering the reader a much more constrained structure for viewing the art works. Ultimately, these two different information structures — one more tightly controlled, the other more open-ended — develop two very different experiences of the art work. The structures themselves makes arguments: they persuade the reader to view the art works one way vs. another. "Impossibly Distinct" provides a sophisticated analysis of importance to both interactive design and information architecture. By providing a detailed description of her own reading practices, Wysocki is able to show how rhetoric/writing research (audience theory, reader response) has something important to contribute to interactive design; many assumptions about interactivity and information design need to be reexamined in light of actual audience response and reading practices.

In a study published in *Technical Communication Quarterly*, Carl Whithaus and Joyce Neff examine the quality of interactivity in a hybrid writing course. (A "hybrid course" is one that employs multiple modes of instructional delivery.) Their study involved students taking the same course, but from three different locations with three different types of interaction: "those physically present with [the instructor, Joyce Neff] in the classroom, those participating in small groups at distant studies, and those at isolated computer terminals without direct voice access" (433). Whithaus and Neff studied 107 students taking an upper division course called Management Writing, taught over three separate sections (offered in Summer 2000, Spring 2003, and Spring 2005). Students participating from a distance accessed the course in various ways: some in a face-to-face context with the instructor and each other (18); some with one-way video and two-way audio (52); others with two-way-video and two-audio (21), and some through video streaming (16). Through this study Whithaus and Neff were attempting to identify qualities of interaction that would encourage effective online instruction.

One of the key findings from their study was that the quality they called "liveliness" was a critical component of learning in online spaces. They defined "liveliness" as "a moment in which discussion emerges in an unpredictable, but not necessarily unplanned for, form" (451). It could be a moment when the students are engaged in genuine problem solving (and there is no one right expected answer); it could be a moment of frustration or tension (e.g., when students are negotiating assignment requirements with the teacher). Whithaus and Neff conclude that teachers should script in "spaces or activities that encourage open-ended student discussion about their writing projects" (451), as a way to encourage liveliness to emerge in a hybrid course. Another important quality for online instruction was presence, both the instructor's and the students'. It mattered to students to know that the instructor was "there," in whatever mode of engagement, listening and responding to students — and it mattered that the students were present, engaged, and active as well. Whithaus and Neff concluded that video-based instructional delivery enhances and complements distance instruction precisely because it does promote both presence and liveliness in the hybrid classroom.

The Whithaus and Neff study affirms that a key feature for effective interaction is the quality of "liveliness," or what Shedroff calls "interesting and compelling experiences." Yes, access and usability are critical measures of audience interactivity, but they represent only the minimal criteria for interactivity. Digital information that is designed in ways that interest and engage audiences, that call upon them to actively participate in co-production, seem to be more effective than those designs that position the audience as passive consumers of information.

Economics

When rhetoric asks questions about audience and purpose — what is my purpose for writing? who is my audience? — it is also implicitly asking questions about the economics of delivery. What motivates someone to produce and distribute a piece of writing? What motivates someone else to access it, read it, interact with it? What drives the interaction and makes it productive for both parties? These are basic questions of rhetorical

production (aka, composing), which are also basic questions of economics.

Why do we write? The stock answer in rhetoric/composition is something like "to inform, to persuade, to entertain," etc. But why would anyone want to *inform* somebody or create a poem? What's the point of doing that? There's another calculus involved in any act of writing: purpose in the sense of *value*. There must be some value for the reader(s) and/or for the writer(s) in the act of producing, distributing, exchanging texts. Somebody has information, somebody else needs it. Somebody wants to express a feeling, somebody else wants to feel it.

Writing — all writing, I would say — resides in economic systems of value, exchange, and capital. These systems are not necessarily monetary or commercial systems (think about Bourdieu's notions of cultural capital and social capital), but they are economic systems nonetheless. The kind of economics I am talking about has to do with value more broadly defined: Yes, it might involve the exchange of currency — but the motivation could be based on desire, participation, sharing, emotional connectedness. This is the secret of the Web 2.0 dynamic.

I use the phrase "the economics of rhetoric"[18] as shorthand for a number of different delivery concerns, including questions about motivation (what prompts somebody to write?); questions regarding intellectual property, ownership, and rights to writing; and matters related to credit, payment, and the labor of writing. The economics of rhetoric is dramatically changed in the realm of digital discourse, as Dànielle DeVoss and I have argued:

> The Internet has brought us to a historical moment where the economy of writing is undergoing a major shift. New economies of writing are emerging that promise to carry writing practices in directions that are not yet clear but which will have significant impact on basic literacy. Students' writing will be published writing, and it will be produced in genres and by processes that depart radically from the traditional ways writing has been practiced and taught. The development of Internet writing in its various manifestations (Web sites, email multimedia, instant messaging) is dissolving the traditional gap between writing and publishing. The nature of writing on the Internet is being influenced by economic considerations — for example, involving e-commerce, public policy, copyright legislation — that will have a significant impact on the shape of writing. (DeVoss and Porter, "Why Napster Matters" 194-196)

This dramatic economic shift has occurred because of technological developments involving "the internetworked computer" (Porter, *Rhetorical Ethics*) and because of the social networks that the technology has helped to promote. The computer + the Internet and the World Wide Web provide publishing capacity to the individual writer. With a networked computer with a copy-paste function,

[18] Economics has always been an important component of rhetoric, I and my colleague Dànielle DeVoss have argued, but historically the relationship has only occasionally been articulated, appreciated, or examined within the field of rhetoric — most notably by Deirdre McCloskey and Richard Lanham (see also Carter). I need to distinguish my notion from both McCloskey's and Lanham's. This discussion concerns *the economics of rhetoric*, not *the rhetoric of economics*. McCloskey looks at how rhetoric plays a role in the field of economics. I am looking at the economics of rhetoric — that is, how rhetorical contexts themselves rely on an economic system of exchange. The exchange is not always a commercial one, but there is an exchange of value that serves as the motivation for the production and circulation of rhetorical objects. So, in linking up rhetoric and economics, I am not doing it à la McCloskey. Nor am I doing it à la Richard Lanham. In *The Economics of Attention*, Lanham argues that in the digital age we need a new economic model — an economy of attention based on rhetoric, which he sees from a stylistic and design perspective as the art of deploying creative, imaginative, and innovative techniques for grabbing and keeping audience attention. In this realm — and I would agree with Lanham on this point — specific domain expertise matters less, rhetoric matters more. However, Lanham's stylistic view of rhetoric misses an essential point about the digital economy. It's not just about style, it's also about substance and value. A broader view would see rhetoric as requiring a productive and pragmatic knowledge about how to create information products that will matter to people (i.e., be usable and useful). A broader view of rhetoric would include inquiry procedures (i.e., inventional tactics) aimed at understanding what motivates people to create, search, and circulate knowledge. In other words, the digital economy needs a robust view of rhetoric, a view that includes inventional procedures for developing knowledge and for collaborating with audiences to co-create knowledge.

"You have … the capacity to download and upload files, and, if you have broadband Internet access, with the means to distribute and access a wide variety of information (text, graphics, audio, video) globally, quickly, and relatively easily" (DeVoss and Porter 195). Such a capacity threatens the traditional print-based and analog models of publishing and media distribution because it puts publishing capacities in the hands of a much broader cross-section of society. Not everybody has this capacity to be sure (see discussion of Access/Accessibility), but a much broader range of ordinary users now has the economic means to "compete" (in some sense) with traditional publishers and media conglomerates — in the same way that the printing press opened new avenues for print distribution in the 16th century and threatened the Church's control and power over the distribution of knowledge.

The first major crisis of the new digital economy was "the Napster crisis" (DeVoss and Porter). The Napster filesharing service was first launched in 1999 and became wildly and hugely popular as a mechanism for music fans to upload, download, and share music files using a P2P (peer-to-peer) protocol. The Recording Industry of America (RIAA), seeing immediately that such a service was a threat to its ability to control (and sell) music CDs, sued Napster. Napster was shut down in 2001, when a judge ruled in favor of the recording industry (A&M Records v Napster; Borland and Barnes; DeVoss and Porter 180-181). The Napster issue arose because this Internet-based service enabled thousands of users to upload and share their music files in a comprehensive way that was not possible with analog audiotapes. The recording industry saw such a service as a threat to control over intellectual property of music. What Napser labeled as "filesharing" the recording industry signified with a different term: "piracy." The recording and movie industries in particular have tried to limit Internet distribution of copyrighted music and movies through restrictive copyright legislation coupled with threats of law suits — as well as actual law suits.[19] This is just one example of how, in creating new mechanisms for distribution and circulation, Internet technology has created the cyberinfrastructure allowing for new digital economies to emerge — economies that can create significant challenges for industries built on nondigital economies.

Writing in 1859, Karl Marx provided us with the language for understanding the nature of this crisis:

> At a certain stage of development, the material productive forces of society [i.e., how people actually create products] come into conflict with the existing relations of production or … with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution (Marx 21).

The digital copyright crisis has resulted because a shift in the mode production at the level of material production (e.g., how music is reproduced and distributed via peer-to-peer networking) has effected a shift in social consciousness (i.e., consumer attitudes) which in turn has resulted in a conflict with existing relations of production (i.e., the music industry, and dominant media interests in general). When users download and distribute music files, they are refusing to play the role of passive consumer as dictated by the publishing industry. Rather, they are claiming a right to share their music with others, stepping into a distribution function. What is happening is that the Internet has suddenly and surprisingly cut into the exchange value system set up by the recording industry and other Big Media outlets. Hence the crisis (for them).

Those in rhetoric/composition have typically conceptualized writing from the standpoint of "composing" (creating the isolated text) and "reading" it. But when writing enters digital spaces we need to reconceptualize writing from the point of view of production, consumption, and exchange. This shift in vocabulary is not innocent or neutral.

[19] In 2007, Viacom filed a $1 billion lawsuit against YouTube (and its owner, Google) in an analogous effort to address alleged copyright infringements. Viacom is attempting to protect its intellectual property that has ended up being posted to YouTube by account holders without Viacom's permission and, the complaint says, in violation of copyright law. Like Napster YouTube is claiming "safe harbor" status, meaning that it is claiming immunity from the suit as an intermediary under the Digital Millenium Copyright Act (DMCA) of 1998. If Viacom has a copyright complaint, YouTube insists that they go directly after individual copyright infringers.

It forces us to think about writing as involving labor, as being involved in an economic system of exchange, as having status as a commodity with value (both use value to the reader, but also exchange value).

What are the motivations for distributing information online? What motivates someone to maintain and post to a political blog, or to help some stranger solve their technical problems in a user help forum, or to contribute an encyclopedia entry to Wikipedia — all instances of unpaid writing? As Clay Shirky has said, from an economic standpoint "it sure is weird that the Wikipedia works" (Aigrain). It is not weird if you accept that people write because they want to interact, to share, to learn, to play, to feel valued, and to help others. And that drive of people to interact socially is a key feature of the new digital era. It explains the popularity of blogs and of social networking spaces like Facebook, MySpace, and YouTube.

Just as the public has difficulty understanding why professors publish journal articles "for free," it is sometimes difficult for people to understand the economics of online writing. What would motivate someone to produce free content and publish it in online venues? When we share our course syllabi with colleagues, we don't expect money but most of us do expect at least to receive some thanks or acknowledgement for sharing our work — and we might also expect reciprocal rights: our colleagues will share their course materials with us. This kind of "filesharing" has the use value of increasing the knowledge of the community and of saving us time and effort. The economic model of the academy has long been based on a "gift-exchange model" — it's not pay per use, but rather open and free exchange, for the mutual benefit of all. It's a community model that has worked, and worked well, in all sorts of situations — but it's a model that works because it is subsidized by academic institutions; it is interconnected with a monetary economic model. Of course scholars don't publish articles "for free"; they are compensated indirectly. Academic jobs, raises, promotions are based on publication record. Journal articles are compensated within a different kind of economic system than is freelance or professional writing.[20]

Yochai Benkler is investigating the phenomenon of social sharing in terms of gift exchange economy (Benkler, "Political Economy"; Benkler, "Sharing Nicely"; Benkler, *Wealth*). His first point is that conventional monetary notions of economics are inadequate for explaining the phenomenon of social networking. Like carpooling, social networking does not usually generate dollars directly — but, like carpooling, it does generate economic value, value that is not easily captured by standard economic models. The term that Benkler employs to describe this phenomenon is "commons-based peer production," which refers to a mode of economic production in which the creative energy of large numbers of people is coordinated into meaningful projects, mostly without traditional hierarchical organization or financial compensation. Most scholars are involved in commons-based peer production, or at least they are if they are participants in email discussion groups (aka, listservs). Most professional discussion groups— like H-RHETOR (for scholars working in the history of rhetoric), AoIR-L (listserv for the Association of Internet Researchers), and CHI-WEB (discussion group for web designers) — are based on a gift-exchange economy. Scholars and practitioners participate on these lists not to make money directly but rather to share information and resources of value to the community. You post information helpful to others with the hope (or expectation) that you will receive useful information in return. You join lists pertinent to your interests, your research, your teaching, your political aims — and you contribute according to interest and value. No money ever passes hands on these lists. But such lists are common and active and, I would argue, potentially useful. And when they aren't useful, you have the option of dropping out and joining another list that might be. If you are the sponsor or moderator of such a list, you understand that you need to work to keep the list active and useful: Make sure that respected scholars are members of the list; encourage active participation and postings; and "police" the list to

[20] Writing well before the digital age, Pierre Bourdieu tells us two things of importance to digital distribution: (1) The importance of symbolic capital (or cultural capital) in a society should never be underestimated; and (2) The relationship between symbolic and material capital matters, they have an effect on one another. (Symbolic capital is tied to the potential and actual development of economic capital.) Figuring out how this works is NOT just the job of economics. It is the job of rhetoric as well.

make sure that irrelevant and off-topic postings and flames are kept to a minimum. Keeping such lists useful to participants does require maintenance, guidance, and leadership.

The other delivery crisis of the digital age is the plagiarism crisis — the perception (backed by some evidence) that the academic problem of plagiarism has become much, much worse in the digital era, thanks to easier access to available texts (through the Internet) and thanks to the growth of the online term paper industry. In the realm of the Internet and World Wide Web, plagiarism makes a lot of sense from an economic standpoint — that is, if we are willing to suspend the ethical standpoint. In the world of digital filesharing, it makes much more sense to find available material and to recycle it rather than to create new material. From the standpoint of efficiency, recycling makes a lot of sense. The issue for digital writers is distinguishing between licit and illicit recycling — with the understanding that the guidelines for determining that distinction rely on a rhetorical understanding of the contexts of use. In academic contexts, the rules for crediting others' work vary from in professional workplace contexts or from social networking contexts. In a digital economy the role of the professional writer/designer shifts from production of original content to managing information: that is, overseeing the design, development, and testing of information products. What we have in digital writing is a different economic exchange system than for print. Capital resides not so much in the original texts you produce, but rather (a) in your ability to deliver and circulate texts in ways that make them accessible and useful to others and (b) in your ability to collaborate with others, to share files, to co-create meaning in social spaces. In other words, in the digital economy, what we come to think of as "writing ability" is shifting toward a collaborative notion of networked writing.

The production, distribution, use, and circulation of digital materials always involve issues of intellectual property — sometimes trademark issues, but almost always copyright issues. I see the issue of copyright — and the related issues of ownership, licensing, and control of digital material — as a key subtopic of digital delivery. Take the example of the screen shot, a common technique for capturing/copying online images (e.g., as I have done with the web sites illustrated earlier in this article). Almost every screen shot involves the capturing of copyrighted material. The question is, Who owns the copyright? For a screen capture, there are likely to be multiple copyright holders involved. For example: If I capture a Facebook page, I am likely picking up three types of copyrighted material: (a) original work created and uploaded by the account holder, the "user" (e.g., photos, comments and captions, messages); (b) potentially, work copyrighted by others that the user has "borrowed" for use on her/his site; and (c) most likely, pieces of the Facebook interface copyrighted or trademarked by Facebook.

As with most social networking sites, Facebook explicitly claims copyright status over all "Site Content" (defined in the excerpt below), which it distinguishes from "User Content." When I as a researcher take a screen shot of a Facebook site, I am picking up textual elements that are part of Site Content but I am also certainly picking up visual elements that are covered under Facebook's Trademark policy, which absolutely forbids reusing that material:

> FACEBOOK, THE FACEBOOK, FACEBOOKHIGH, FBOOK, POKE, THE WALL and other Company graphics, logos, designs, page headers, button icons, scripts and service names are registered trademarks, trademarks or trade dress of Company in the U.S. and/or other countries. Company's trademarks and trade dress may not be used, including as part of trademarks and/or as part of domain names, in connection with any product or service in any manner that is likely to cause confusion and may not be copied, imitated, or used, in whole or in part, without the prior written permission of the Company." (Facebook)

In other words, according to Facebook's policy, it seems that I need to secure their permission to publish screen shots containing trademarked Facebook elements as part of my research. Does the Fair Use clause of US Copyright Law give me the right to use such elements without securing permission? Most researchers operate on the assumption that it does — because research is mentioned in the Fair Use clause as a distinctive kind of noncommercial work — but that question has never been adequately tested in court. The other Fair Use factor important to this decision is the amount of the borrowed material. In print publications we typically include only short snippets of copyrighted text — because that's all

that the space of print can economically afford — and most legal interpretations of the clause would seem to support such uses of copyrighted material (depending on the context of use). However, because of the low expense of copying and redistributing the entirety of digital materials, it is cheaper to copy the entirety of a data set, including entire videos, audio clips, and textual documents. The Fair Use clause of US Copyright Law (Section 107) lists as one of the four key factors to be considered as "the amount and substantiality of the portion used in relation to the copyrighted work as a whole." Thus, if you republish the entirety of a copyrighted work, you are more likely to be outside the protection of the Fair Use clause.

Negotiating questions about the rights of users (writers) vis-à-vis the rights of copyright holders (authors, publishers) is one of the key economic questions regarding digital material: deciding what is usable and what isn't, who needs to be credited and who doesn't, and who has the right to control these decisions involves both legal and ethical considerations (Porter, "Legal Realities"). Such questions are important for individual writers, but they are also large social and political questions involving copyright laws and information policy. To be an effective digital writer and designer, one who has sufficient understanding of the *techne* involved here, requires extensive and current knowledge of the status of law and policy.

Conclusion

I have attempted to demonstrate that technical knowledge is integral to digital rhetoric — and that such knowledge is not merely mechanical, technical, routinized procedure. Yes, it can certainly be reduced to that (and often is), but when practiced as art (*techne*) technical knowledge intersects with rhetorical and critical questions in order to assist discursive production and action. The *techne* of digital rhetoric required here must be of two types: (1) Productive how-to knowledge — i.e., the art of knowing various technological options, and knowing how to use them to achieve various rhetorical effects. (2) Practical judgment, ethical *phronesis* — i.e., the ability to ask and answer critical questions about one's choices: e.g., what serves the common good, what are the human implications of various options, who is included/excluded, who is helped/hurt, who is empowered/disempowered by various technology designs? *Productive* knowledge about making and *practical* knowledge about doing (and the ethics of doing) should work in conjunction to guide writing/communication practice. Here is where humanistic thinking has much to contribute to the field of Human-Computer Interaction.

One final point about rhetorical invention: By themselves, as static topics, these *koinoi topoi* of delivery — Body/Identity, Distribution/Circulation, Access/Accessibility, Interaction, Economics — do not do very much. To maximize their generative or productive power you must put them into dynamic interaction with each other and with other rhetorical topics. In other words, you connect up questions of delivery with rhetorical invention, with audience, with design of online information, and so on. Sort of like the relationship between Kenneth Burke's pentad and the ratios. Burke's pentad forms the basis for his dramatistic method. The five perspectives of the pentad — scene, act, agency, actor, purpose — represent five viewpoints one can take toward human situations. However, it is through forming the *ratios* — i.e., putting the five elements of the pentad into dyadic relationships (scene-act, scene-agent, etc.) that promotes critical understanding about human action and motives. Similarly, with the *koinoi topoi* of delivery: It is making connections between and across the topics that enables productive inventional thinking.

Here is one example of what I mean: A real-world communication problem for emergency room healthcare is how to locate relevant patient records quickly and how to represent them textually, aurally, and/or visually — sometimes on extremely small handheld screens — in ways that healthcare providers can quickly determine the proper course of medical care. In an emergency room, getting the right information quickly to the right medical personnel can mean the difference between life and death. Studying this process and designing information systems to meet the needs of multiple healthcare users are a concern of designers in HCI and researchers in usability studies. This is not merely a mechanical question, but rather a matter of *techne*: a problem that concerns critical decisions about audiences and their disciplinary orientations (e.g., given their differing roles in

healthcare, nurses, doctors, hospital administrators, and lab technicians need different kinds of information and at different levels of granularity); questions of information selection and arrangement; ethical issues regarding patient privacy and who should have access to what information; deep understanding about the workplace context and the rapid information dynamics of that context (What happens in emergency rooms? How do healthcare providers do their work, how do they access information while providing patient care?). The distributed information is not just digital of course. The communication dynamic involves print, oral, and digital forms of information intersecting (and, at times, conflicting) — and of course the patient's body is right there as the key focal point of the entire scene. The canon of memory plays a key role in this setting: i.e., retrieving a patient's medical history, lab test results, and so on. Memory here is not only a mechanical question of information storage, but a *techne* question involving the process for generating information content and considering audience (*inventio*), design of information (*dispositio*), and mechanisms for technological delivery (*actio*).

Solving this problem for healthcare requires a robust and integrated approach; it requires putting the topics of the rhetorical canon into dynamic tension: We must understand how to store patient information (*memoria*) so that it can be quickly retrieved by different users who are accessing that information for different purposes at different stages of patient care. The information has to be arranged (*dispositio*) in a way that is easily comprehensible. It has to be delivered (*actio*) via different media. The persons responsible for entering that data have to understand what data is needed by what audiences for what purposes (*inventio*) and design the information (*dispositio*) in a style that is clear and concise (*elocutio*). The question of delivery of information is also complex: How do I insure that different audiences, accessing the information via different media and browsers and devices, "see" the same information? What mechanisms do I install to allow certain designated users to change/update patient information — and who has the right to change the patient's record? What policies and technological constraints need to be built in to insure that patient information is distributed quickly to those who need it, but that also protect the information, screening it from those who do not have a right to see it? Treating the problem only as a mechanical question or as a matter for information storage and retrieval misses the complexity of the rhetorical setting, particularly the complexity of the *use* of this information by and for humans. This situation needs smart technological thinking for sure, but it also requires smart rhetorical thinking (and legal and ethical thinking) that is sensitive to audience needs and the context of the use of that information, a context that includes legal and political considerations as well as health-related and disciplinary ones.

The point of reviving delivery is not to demonstrate the enduring truth of classical categories. What matters is developing useful rhetoric theory. A useful rhetoric theory should raise significant questions and encourage productive thinking about how to communicate with others. The real value in developing a robust rhetorical theory for digital delivery lies in production: How can this theory aid productive action? How can it prompt the critical thinking of writers/designers and help them produce better (more valuable, usable, and useful) online communications and thereby help people with their lives? As always, the ultimate point of rhetoric is to help writers/speakers/designers do a better job of helping people with their lives — or, even, save lives. Developing a robust rhetorical canon for digital delivery is necessary for achieving that end.

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