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In June of 2015, my long-term project on digital rhetoric, *Digital Rhetoric: Theory, Method, Practice*, was published both in print and online by the University of Michigan Press. I selected Michigan because it offered both publication venues and allows for a creative commons license on the work—thus ensuring both open access and potential for re-use and remix; both of which I see as key practices for digital rhetoric scholarship (and which are also available in *Enculturation* of course). I started the book project in 2003, and it progressed through a series of iterations and revisions before being finished (or at least, in its publishable form) in 2013. As you can see, there has been a bit of time between the completion of the manuscript and the final publication—and in that time, there has been quite a bit of movement in the emerging field of digital rhetoric.
At present, books are still primarily static objects. Most are not interactive and those that are printed become what Bruno Latour calls “immutable mobiles” (*Science in Action*, 7) with all of the affordances—but also the constraints—of their forms. We have the technical infrastructure that would allow a reconceptualization of the monograph or book to become an updateable, interactive, and collaborative knowledge ecology (a proposal I continue to tinker with and hope to demonstrate in the relatively near future), but we don’t have the social or economic means to so radically re-shape our scholarly traditions. The next best option is to present updates and addenda that build upon, extend, and in some cases correct our published treatises. This article aims to do just that, with a focus on advances in theory, method, and practice of digital rhetoric that do not appear in the book, but that should be part of the larger conversations about how we define digital rhetoric.

Many of the participants at the Indiana Digital Rhetoric Conference presented new approaches to articulating the field of digital rhetoric and demonstrated new digital rhetoric theories (although methods and practices were less well represented, as can be seen in Crystal VanKooten’s presentation). In this article, I will first provide a brief tour of the history of digital rhetoric and the key arguments that I put forth in my book; I will then map out a number of critical approaches and innovations that challenge, mediate, and contest the realm of the field as I have drawn it in *Digital Rhetoric*.

**Digital Rhetoric: Definitions and Key Terms**

In *Digital Rhetoric*, I suggest that “the term ‘digital rhetoric’ is perhaps most simply defined as the application of rhetorical theory (as
analytic method or heuristic for production) to digital texts and performances” (Eyman 44). Just like rhetoric itself, digital rhetoric is both productive and analytic, so it has to provide methods for both evaluation and making. These dual requirements are met through both of the means represented in the term itself—the rhetorical (as theory and method) and the digital (as means or mode). Thus, I begin with a brief consideration of these two elements, providing basic definitions and staking out the epistemological boundaries of each arena.

**Rhetoric**

In the Western tradition, of course, we must always begin with Aristotle, that great taxonomer and maker of lists and definitions. Despite his teacher’s reservations about the value of rhetoric, Aristotle decided that if rhetoric should be used, (as Plato suggested) to convey the knowledge divined via dialectic, then we should systematize its use and determine its most effective techniques. But because of his lineage, Aristotle goes to great lengths to establish rhetoric as a branch of dialectic, effectively arguing that the work of rhetoric could not include the formation of new knowledge or the discovery of meaning. For this reason, I am more inclined to look to the Sophists for a richer definition and approach to rhetoric.

The Sophists understood the provenance of rhetoric to be situated in a specific context—a particular place, a particular moment, and a particular argument. For the Sophists, there was no recourse to an absolute truth in any given case, thus all meaning is engendered through the kairos-driven persuasion of rhetorical language use. When aligning the work of the Sophists in a digital networked context, I see three main points of connection: the idea of specific contexts and
interpretations explicated in the *Dissoi Logoi*, the focus on audience identification promoted by Isocrates, and the power of rhetoric to shape reality, an idea most fully realized in Gorgias’s treatise on Non-Being.

I see the *Dissoi Logoi*, which presents opposing views on key terms and values (such as truth and falsehood or the seemly and shameful; in other words, the kinds of totalizing concepts that often clash in online comment forums), as an ancient form of the kind of knowledge made available via digital global networks: customs, practices, and even epistemologies are not universal, but are rather situationally or culturally specific. At the same time, the *Dissoi Logoi* counters with examples of ways in which abstract qualities can exist independent of situation—gesturing toward the possibility of establishing common grounds despite cultural differences.

Similarly, Isocrates’s use of *doxa* (community held belief), according to Takis Poulakos, focuses on “the process of constituting audiences and their identities” (64), to some extent presaging Burke’s focus on identification in a more contemporary theory of rhetorical persuasion. We can see an example of rhetorical identification in the Isocratean sense playing out on our Facebook and Twitter feeds on a daily basis.

Of course, in the distance between the fractious argumentation and trolling across Internet comment sections and the building of community that can happen on social media platforms (particularly those that promote insularity over wide-public circulations), lies the problem of language itself. The Sophists argued that rhetoric is necessary because there is no established, external, objective meaning that is accessible to both speaker and audience in any given
conversation—as Gorgias suggests, language is not a shared understanding of an ideal form (as Plato might call it), but is instead an imperfect approximation of our individual experiences. That is, “window-pane” theories of communication that claim a true clarity of meaning can be imparted if we simply choose the correct words and structures are a fool’s errand because their aims are incommensurate with the human capacity to perceive and communicate a non-existent reality (see Gorgias, *On Non-Being* for the full argument). Rhetoric, then, includes the techniques we use to overcome the opacity of language itself, and is thus critical to effective communication.

Not only does Gorgias make the case for the requirement of rhetoric for the conveyance of meaning, he also extends the argument to declare reality itself a product of language. As Bruce McComskey notes, Gorgias argues “that reality serves merely the referential function of revealing logos” which means that “the art of rhetoric can be studied and is the most profitable object of study” (38).

Echoing the sentiments of Gorgias, Lloyd Bitzer offers a contemporary definition of rhetoric: “In short, rhetoric is a mode of altering reality, not by the direct application of energy to objects, but by the creation of discourse which changes reality through the mediation of thought and action” (4). I find this definition particularly apropos for articulating a foundation for digital rhetoric because networks, applications, and software do not apply energy to objects; rather they use energy as the infrastructure of rhetorical action, the result of which is to change the reality of the users and systems they touch.

A challenge for scholars and teachers of rhetoric arises in an oft-heard
refrain: if rhetoric takes up both discovery and invention of meaning via language, and is concerned with the probable and contingent (yet, following the Sophists, argues that there is nothing but the probable and contingent), isn’t *everything* rhetoric? It is in response to this query that I suggest that there are specific requirements for rhetoric to be in play. And my take on these requirements for what “counts” as rhetoric takes up one of the key debates in the field: can non-human actors deploy rhetoric via their own agency and can they be seen as rhetoricians in their own right?

This question is not actually new: George Kennedy’s arguments for theorizing animal rhetorics pre-date the more current arguments about object-oriented rhetorics and the development of software agents that continually draw nearer to displaying artificial intelligence. In all three cases, I draw the line at extending rhetorical agency beyond the human: to actually be rhetoric(al), the communications we study must engage humans at some point in their generation.

In a response to Kennedy’s work on animal rhetorics, Debra Hawhee notes that

Kennedy’s attention to animals yields three crucial challenges to rhetorical theory: first, it shifts attention from “wordy” language to language rendered with calls, tones, facial expressions, and bodies. Second, it posits rhetoric as energetic intensity, a movement, or an urge to move others ….. And finally, the speaker or author takes a back seat to the audience. (81)

While I do not disagree that the performative aspects of rhetoric
should be recovered, and that multimodal rhetorical practices can tap into the focus on vision, sound, and movement as instances of rhetorical communication, I would nonetheless argue that a conscious choice to engage these modes and media harnessed for the purposes of persuasion (whether explicit or implicit) and that a consideration of the possible means of persuasion (per Aristotle) are both requirements of rhetoric. Animals may make a choice to persuade, but their repertoire of means is limited (and the anthropomorphic inclination to grant animals reasoning patterns that are directly analogous to human cognition I think grants too much sense of agency to them; I once again defer to the Sophists: Isocrates would certainly argue that the capacity for rhetoric is what sets humans apart from animals). Software systems may have algorithms that allow for the consideration of best choices among a menu of options for persuasive means, but any agency they have is granted via the human programmers who built the systems. And objects certainly do not have conscious choice (or, if they do, we have ventured into the realm of spirituality rather than rhetoric).

My argument for the centrality of the human does not mean that counter-claims regarding animal, object, and software agents as rhetoricians don't have anything to contribute to digital rhetoric —indeed, Hawhee’s comments above are important reminders that these “challenges” can as easily apply to digital texts and performances in terms of media and mode, and in terms of the materiality of digital production, and the role of the audience.

Another of the recurring arguments in the field of digital rhetoric is whether we can apply the principles of classical and contemporary (read, pre-fully-realized communication networks) rhetorical theories and methods to digital and hybrid modes, or if we need to invent new
theories and methods (e.g. new appeals, to extend ethos, pathos, and logos—such as an appeal to “cool” a la Jeff Rice and Mark Pepper, or a complete overhaul of the classical canon, as exemplified by Prior et al.). From the preceding examples, it should be clear that I believe that classical theories and methods can be mapped onto digital media and modes, but I think that there is certainly room for an extension of rhetorical theory to account for new ways of making meaning (as, indeed can be argued has happened throughout the history of rhetoric). The “digital” allows us to both re-invigorate and re-imagine rhetoric as well as providing an impetus to innovate and invent as well.

**Digital**

Alongside rhetoric, the other key term is “digital.” I prefer to take up the question of the digital in fairly technical terms, because I believe it is important to understand computer-based network infrastructure for digital communication as intrinsically connected to the history of writing itself and to avoid the pitfalls of trying to separate the digital as a realm disconnected from the “real”—this sense of the digital as a distinct environment leads to misguided notions such as the idea that the generation that grew up with the world wide web should be considered “digital natives” (see Siân Bayne & Jen Ross).

Digital is not synonymous with technology, nor is it limited to computers and other electronic devices. In fact, writing itself has always been both a technology (Dennis Baron) and an example of digital communication (Eyman). In technical terms, digital systems are made up of discrete values whereas analog systems feature a continuous range of values, often represented as a wave; based on this approach, the alphabet, as a series of discrete graphemes, is actually
digital. If oral speech is analog, and written texts are digital, we can immediately see what affordances arise from digital communication (starting with the earliest examples of writing systems and continuing through to modern computer-based communication): digital forms allow for recording (fixing the form), transporting, reflecting upon, and remixing. Notably, all of these features apply to any kind of writing, not just computerized forms.

The more common use of “digital” represents the encoding of information in binary digits (bits), which may occupy only two distinct states (on or off, 1 or 0). This is the underlying technology that makes possible electronic communications, writing on computers, and communicating via networks. I want to point to this broader notion of the digital to remind us that while digital tools (built on the aforementioned binary system) allow for a much greater array of media and definitely more facility in recording, transporting, revising, and remixing all kinds of texts, we shouldn’t lose sight of the connection between what may be seen as a totally new approach or innovation (the Internet; networked communications) and the histories of writing and rhetoric that precede our electronic world.

The digital/analog distinction is, to me, more productive than opposing electronic and non-electronic forms of writing (hence “digital rhetoric” not “electric” or “electronic” rhetoric); seeing the digital in this historic frame helps us to posit the uses of classical rhetoric for digital communications (in the contemporary sense)—if writing has always been digital writing, then in some regards, rhetoric has always also been digital rhetoric. This approach also highlights the connectedness of the digital to its material infrastructure and, by extension, the embodiment of human rhetors who use digital forms.
I believe that it is important for digital rhetoric, as a field, to not lose sight of the infrastructures of networked systems, electronic devices, and digital texts and performances we study: we must not elide questions of materiality (such as the environmental consequences of planned obsolescence; see Shawn Apostel & Kristi Apostel), the relationship and connection of bodies to systems, and the conditions of labor required for the production and circulation of digital texts and performances.

Having considered the roles and histories of both “rhetoric” and the “digital,” I now turn to my version of the history of the field of digital rhetoric, which begins roughly twenty-five years ago.

A History of Digital Rhetoric Scholarship

In the following section of this essay, I provide a brief history of the development of digital rhetoric as a field of study. Before I begin, I am compelled to acknowledge that historical narrative relies on the position of the narrator—versions of such a history from the perspective of different disciplines will necessarily take different approaches depending on the central focus of the home discipline. I see rhetoric and writing studies as the progenitor of digital rhetoric, although I acknowledge that it is inflected by film and media studies, software studies, science and technology studies, technical communication, game design, and other fields.

Before I look at works that focus explicitly on theorizing rhetoric in digital contexts, I will briefly touch upon two important precursor fields that much historical and contemporary work in digital rhetoric has drawn on: media and new media studies, and computers and
Media Studies

Media Studies is the most obvious precursor to digital rhetoric in many respects—from McLuhan’s early work on persuasion in mass media in *The Mechanical Bride* and his widely influential *Understanding Media* to Henry Jenkins’s work on fan fiction and transmedia storytelling, there is a great deal of overlapping interest when it comes to the study of digital media and our interactions with it. And a number of media studies scholars have contributed key approaches that have been taken up by digital rhetoricians, from Walter Ong’s notion of “secondary orality” in *Orality and Literacy* to Donna Haraway’s *Cyborg Manifesto*.

Indeed, it may well be possible to construct a version of digital rhetoric that originates in media studies rather than rhetoric and writing, but I would contend that digital rhetoric requires rhetorical theory as a central concern. I would also suggest that the focal point is also indicative of a distinct split between the two approaches: whereas classical rhetoric places the rhetor at the center and focuses on the rhetor-audience relationship, media studies places medium as the central object of study.

While it is beyond the scope of this article to take on the question of defining “new media” (which is arguably more difficult than defining “digital rhetoric”), the trajectory of media studies does lead fairly directly into work that digital rhetoric scholars have taken up as productive contributions.
In my own work on digital rhetoric, I have drawn upon and used work that falls under the rubric of new media fairly regularly. For my dissertation, I developed a heuristic for analyzing academic work that had been published on-line that was based on a continuum of remediation (from transparent to hypermediated) that comes from Jay Bolter and David Grusin’s *Remediation: Understanding New Media*. Bolter and Grusin’s work provides a bridge between the hypertext theory of the 1990s and the broader approaches to theorizing “new” media that arose from media studies.

Lev Manovich’s *Language of New Media* has also been deeply influential—I would characterize that work as a rhetoric of new media in its own right, and while his approach disavows rhetoric in favor of a media studies approach, nearly all of the theoretical framework Manovich provides can (and has) been applied in digital rhetoric scholarship.

Finally, there is an entire school of digital rhetoric scholars who trace their lineage though the work of Gregory Ulmer. While his *Internet Invention* most explicitly invokes rhetoric as a key concern, much of his other work, from *Teletheory* to the newly released *Electracy: Gregory L. Ulmer's Textshop Experiments* deal with questions of identity and rhetorical performance in digital spaces. Ulmer is an interesting case because he crosses a number of field and disciplinary boundaries—for instance, his work is as likely to be utilized within computers and writing as it is in media studies.

*Computers and Writing*

The field of computers and writing marks its inception with Hugh
Burns’s 1979 dissertation, which appears to be one of the first to study how computing technology can be harnessed to teach writing. For his project, Burns programmed and evaluated three modules that were designed to lead students through various classical topoi in order to assist with invention; this is also the earliest example that I am aware of that explicitly connected rhetorical practices as supported by digital technologies. In some ways, it is tempting to see computers and writing as the sole or primary starting point for digital rhetoric, but (as I hope becomes clear below), I’d like to complicate that relationship because computers and writing as a field has historically been more interested in composing and teaching writing than in rhetorical theory as its primary focus.

The first journal in the field made this focus explicit: *Computers and Composition* started as a newsletter in 1983 (edited by Kate Kiefer and Cindy Selfe) and become a full-fledged journal in 1985. Gail Hawisher joined Selfe as co-editor in 1988 and together Hawisher and Selfe collaborated on both the journal and many of the key edited collections in the field. A full early history of computers and writing is available in Hawisher, LeBlanc, Moran, & Selfe, but I want to briefly touch on two particular early approaches that are most relevant to digital rhetoric. The first is a continuation of the work begun by Burns, as writing teachers in the early to mid-1980s explored creating their own software platforms for digital writing and learning. In the “The Student as Producer and Consumer of Text: Computer Uses in English Studies,” Helen Schwartz (one of the aforementioned pioneer software designers) provides an overview of the programs developed in the 1980s; tellingly, they all appear to use rhetoric as their conceptual framework. A full treatment of this impulse to directly build software to support digital rhetoric pedagogies can also be found in Paul LeBlanc’s *Writing Teachers Writing Software*. 
The second issue takes a rhetorical-theory approach to examining the relationship between software platforms (whether designed by writing teachers or others) and their affordances for the production of meaning. Selfe and Selfe’s “The Politics of the Interface: Power and its Exercise in Electronic Contact Zones” is an influential example of bringing rhetorical analysis to bear not just on new kinds of communication, but on the infrastructures and systems that make digital writing possible.

While both Media Studies and Computers and Writing are important contributors, in the abbreviated history that follows, I focus on work that explicitly synthesized the key elements outlined above—rhetoric and the digital—as the focal points that ground the field’s history. Because, as rhetoricians, we can adapt and frame the work of nearly any field as rhetorical work, one version of this history could include all of the scholarship and research that addresses the design and use of technology, as well as histories of writing technologies from the clay tablet to the printing press, but such an approach is beyond the scope of my aim here, which considers the key scholars and texts who have brought a wide range of fields and topics into a distinct “digital rhetoric” conversation and framework.

I see digital rhetoric as a field as having developed in two distinct stages: 1) an initial foray that examines the overlaps between hypertext and electronic literature, classical rhetoric applied to television and screen-based media, and the rise of digital tools in technical communication, and 2) a second wave that develops and applies new theoretical perspectives on digital communication
practices that are as distinctly situated in established fields, but that draw on new media, communications, and composition-rhetoric as starting points. Key works in the first iteration are Richard Lanham’s *The Electronic Word: Technology, Democracy and the Arts*, Kathleen Welch’s *Electric Rhetoric: Classical Rhetoric, Oralism, and a New Literacy*, Laura Gurak’s *Persuasion and Privacy in Cyberspace* (and Jim Zappen’s *TCQ* article, “Digital Rhetoric: Toward an Integrated Theory”).

Most accounts credit Richard Lanham with coining the term “digital rhetoric” in a 1989 conference presentation that was eventually published in Myron Tuman’s *Literacy Online* and later included in Lanham’s *The Electronic Word* (see Losh’s *Virtualpolitik* for a detailed account). While Lanham appears to get the conversation started, I do see a drawback to his approach—in *The Electronic Word*, his opening chapter situates his work within literary studies rather than rhetoric, and carries forward this reliance on literary theory, thus implying that digital rhetoric grows out of that subset of rhetorical studies that is the study of literature—rather than the broader and more theoretically robust field of rhetoric as a whole.
Kathleen Welch, on the other hand, does draw explicitly on the history of rhetoric—her *Electric Rhetoric* brings together elements of visual rhetoric and screen literacy, arguing that the humanities has neglected to theorize video as a compositional medium that bridges print and oral literacies, and she also argues, as I have above, that we should not begin with Aristotle, as most other scholars have, but to go back to the Sophists, and to Isocrates in particular to find the most productive connections between classical rhetoric and screen literacies. However, her work does focus primarily on screens-as-delivery and does not fully engage the invention capacities made possible by computer technologies.

At roughly the same time, Laura Gurak published a work that could be considered one of the first instances of applied digital rhetoric: *Persuasion and Privacy in Cyberspace: The Online Protests over Lotus MarketPlace and the Clipper Chip*. Gurak situates her work as a bridge between technology futurists who theorize about the larger issues of technology and society and the work in computer-mediated communication that primarily used small-scale cases and experimental studies. Critically, Gurak looks not just at the debate about the use of technology from a rhetorical standpoint, she also examines how the participants in the debate she examines actually use new digital networks as rhetorical vehicles as they make and perform their arguments, which allows her to theorize how networked communications alter traditional approaches to delivery and ethos.

Relatively little uptake of the term or its concerns happens for the next five years, although one can make a posteriori claims that the hypertext theory boom of the mid 1990s and much of the work in the field of computers and composition are actually approaches to digital rhetoric. To my knowledge, the first degree program that includes
“digital rhetoric” in its title is the MA in “Digital Rhetoric and Professional Writing” at Michigan State University, founded in 2003.

The next important and explicit invocation of “digital rhetoric” in a scholarly publication occurs in Jim Zappen’s _TCQ_ article, which is itself an extension of earlier work on “rhetoric, community, and cyberspace” (Zappen et al. 400); Zappen’s work appears to be deeply indebted to Gurak’s earlier work and arose at least in part out of their collaboration. Zappen defines “digital rhetoric” as:

- the use of rhetorical strategies in production and analysis of digital text
- identifying characteristics, affordances, and constraints of new media
- formation of digital identities
- potential for building social communities. (319)

I had begun to work on mapping classical rhetoric to digital practices in 2003 (having joined the first student cohort of MSU’s PhD in Writing and Rhetoric, which included a concentration specifically on “Digital Rhetoric and Professional Writing,”) and the publication of Zappen’s article in 2005 demonstrated that “digital rhetoric” could be a focus of study in technical communication as well as fitting in with computers and writing (the field I most strongly identified with at the time). At MSU, I had also joined a research group called DigiRhet.net whose aim was to develop digital rhetoric theory and pedagogy; our first publication, “Teaching Digital Rhetoric” appeared in _Pedagogy_ in 2006.

Lanham, Welch, Gurak, and Zappen had set the stage for a surge of
interest in the idea of digital rhetoric as both a field and a descriptive term for theories and methods that addressed the new writing technologies that were finally moving from specialized use to ubiquitous presence in both classrooms and homes. My own reading of the field sees the second wave of publications to take up and seriously advance interest in digital rhetoric include four very different approaches: Barbara Warnick’s *Rhetoric Online*, which demonstrates how rhetorical theory and method can be applied to digital texts, Ian Bogost’s *Persuasive Games*, which uses digital rhetoric as a context for his development of “procedural rhetoric,” Elizabeth Losh’s *Virtualpolitik*, which sets up digital rhetoric as a methodological framework for her investigation of the US government’s use of electronic communication, and Collin Brooke’s *Lingua Fracta*, which remediates and extends rhetorical theory in light of new ways of inventing, arranging, and delivering rhetorical communication. Bogost and Losh take aim at explicitly defining “digital rhetoric” (the first scholars to more fully interrogate the term since Zappen’s overview article) and Warnick and Brooke, while not performing such definitional work, provide comprehensive approaches to connecting rhetorical theory and digital practice.

Warnick does a good job of applying classical rhetoric methods to analyze web-based political speech and social activism, and while
fairly limited in scope (for instance, she focuses only on analysis and does not address production), *Rhetoric Online* is one of the first attempts to systematically demonstrate the uses of digital rhetoric. Of particular interest are the chapters on “Field Dependence of Online Credibility,” which theorizes a variation on ethos as a means to judge the persuasive power of websites, and the chapters on interactivity and intertextuality. Her examination of online parody presages an interest in the richly rhetorical practices of remix and remediation—although as noted above, she doesn’t push her analysis into the realm of using rhetoric to create arguments, remaining focused on rhetoric as analytic method).

Ian Bogost presents one of the first comprehensive definitions of digital rhetoric as a foil for his preferred approach, which he calls procedural rhetoric (which arises from the interaction of algorithm-driven mechanics and players of online video games). Bogost argues that

*Digital rhetoric* typically abstracts the computer as a consideration, focusing on the text and image content a machine might host and the communities of practice in which that content is created and used. (25)

His aim is to bring the computer into focus and place it at the center of rhetorical practice (recovering it from the “abstraction” he claims is typical of digital rhetoric). However, since digital rhetoric has not been fully articulated as a field at the time of his writing, it seems that he is setting up a bit of straw man argument via his characterization of digital rhetoric. Additionally, I see his version of rhetoric as focusing on expression as a key element, which sidelines the more expansive
approach that I believe rhetoric encompasses. Despite these critiques, I see Bogost’s work as quite influential in terms of delineating the domain of digital rhetoric, and I believe that his development of procedural rhetoric is quite a powerful tool, although I would count it as included in digital rhetoric rather than set against it.

Bogost and Losh present the most cogent explications of “digital rhetoric” and I consider them the go-to reads for students and scholars of digital rhetoric. While Bogost presents a fairly succinct (and somewhat narrowly defined) account of digital rhetoric, Elizabeth Losh provides a more detailed and considered approach in Virtualpolitik. Losh identifies four principal definitions, focusing on practice, object of study, and field of scholarship:

1. The conventions of new digital genres that are used for everyday discourse, as well as for special occasions, in average people’s lives
2. Public rhetoric...represented or recorded through digital technology and disseminated via electronic distributed networks
3. The emerging scholarly discipline concerned with the rhetorical interpretation of computer-generated media as objects of study
4. Mathematical theories of communication from the field of information science, many of which attempt to quantify the amount of uncertainty in a given linguistic exchange or the likely paths through which messages travel. (48)

Losh’s work brings us closer to seeing both the analytic and productive capacities of (digital) rhetoric, particularly through her
interest in how we make and use new digital genres for both everyday communication and in the service of public performances. I do, however, take exception to the fourth definition, as it moves from the realm of rhetoric-as-human-communication to the arena of message-transmission as a technical act. Because rhetoric is situational, and to go back to Gorgias’s arguments about the impossibility of absolute clarity of language, attempting to constitute persuasive communication in terms of information packets, while very helpful for making sure the digital bits move from place to place, cannot provide any benefit in terms of understanding or utilizing rhetorical speech or action (see Jennifer Slack, David Miller, and Jeffrey Doak; and Eyman for additional detail about the misuse of these theories in the context of human communication).

Finally, Collin Brooke’s *Lingua Fracta: Toward a Rhetoric of New Media* extends digital rhetoric theory, reframing and remediating each of the classical canons of rhetoric in light of innovations in digital, networked technologies. Brooke’s work has been deeply influential to my thinking about the capacity to both apply classical rhetorical theory and acknowledge that new approaches may be necessary to fully develop digital rhetoric (particularly as new technologies continue to blur the lines between text/performance, analysis/production, and the virtual/physical). But Brooke’s work also raises a question of terminology—he is clearly working with and through rhetoric, but draws heavily on new media theory and practice. New media (as I understand it) traces its disciplinary history to much more visual origins, arising primarily from film and media studies, rather than the speech-and-text foundations of rhetoric. While I believe that the field of new media has much to offer digital rhetoric, it does not take persuasion as a key concern; it is important to distinguish between the two fields and not conflate them. (This is
clearly not a problem for new media studies, which routinely dismisses rhetoric as unnecessary; see Manovich for an explicit example of this phenomenon).

Taken together, Warnick, Bogost, Losh, and Brooke provide a very solid foundation for a full accounting and definition of digital rhetoric as a field of inquiry, and all of these works feature prominently in my attempt to identify the boundaries of the field and its relationships with other fields that arise out of similar concerns. (As an aside, it seems that the IDRS organizers have a similar sense of the formation of digital rhetoric, as they invited Elizabeth Losh and Collin Brooke to be the opening and closing keynote speakers). In addition to the preceding approaches, my own work in Digital Rhetoric suggests that, alongside Zappen’s and Losh’s lists, we can add the following purposes and appropriate activities for the field of digital rhetoric:

- inquiry and development of rhetorics of technology
- the use of rhetorical methods for uncovering and interrogating ideologies and cultural formation in digital work
- an examination of the rhetorical function of networks
- theorization of agency when interlocutors are as likely to be software agents as they are human actors

In the remainder of this essay, I would like to draw attention to a range of concerns that do not appear in Digital Rhetoric and to new work that pushes on the boundaries of the field or extends its methods and practices beyond those identified above.

Surveying an Evolving Field
I’ve been reflecting upon what has changed since I completed the manuscript for *Digital Rhetoric*, and what important advances have been made in the past few years. After experiencing the invigorating presentations of the Indiana Digital Rhetoric Symposium (IDRS), I devised a list of four major areas of interest or concern that were either only lightly treated in my work or left out altogether: questions of materiality and embodiment as they relate to digital rhetoric; the possibility of software agents as rhetors; a deep investigation of the infrastructures of digital rhetoric (and the practices of digital scholarship); and a serious consideration of the role of code as language(s) of digital rhetoric. In the sections that follow, I primarily draw on the IDRS presentations as representative of these four categories.

**materiality and embodiment**

As noted in the earlier section on the definition of “digital,” I believe that it is critical for digital rhetoric, as a field, to consider how our technologies work with and against our bodies, how the material conditions that give rise to computers and networks impact not just the users of systems, but the laborers who create them and the environments in which they are used. These interests align quite well with the theory-building and methods developed by scholars who work in the arena of new materialism and posthumanism.

With the advent of the Internet of Things and increasing reliance on Natural User Interfaces (e.g. using gestures and proximity that systems can respond to), it seems clear that we will be seeing a resurging interest in the notion of the cyborg and the body-as-interface mechanics will force us to pay more attention to the roles our bodies
play in the production and reception of digital rhetoric. At the symposium, Byron Hawk’s “Gesture Ecologies: Sound Art as Compositional Practice” brought together both kinesthetic action and rhetorical use of sound to showcase a multimedia approach to digital rhetoric practice that requires a physical embodiment to proceed; Anne Wysocki also invoked touch-based interfaces in her presentation, “Small Swipes (little taps) of Sense Formation.”

David Rieder’s presentation on “Transduction, Rhetorical Style, and Writing-as-Line” prefigures the arguments of his forthcoming book, which argues that physical computing will play an important role in digital rhetoric. In Suasive Iterations: Rhetoric, Writing, and Physical Computing, Rieder explains that

The PC Era “normed” us to the computer anchored to our desk, lap, or hands, the all-in-one personal machine through which we did everything. It was an era of centripetal computing—it reinforced the distinction between the virtual and the real and turned us inwardly toward the former. … The paradox of the PC era is that engaging with the virtual requires a disavowal of the real. In the new post-PC era of physical computing, the real is inextricably linked to our engagement with the virtual.

James J. Brown, Jr. offered an example of this linking of the real and the virtual with a description of his project, which uses what he calls “rhetorical dissection” to take apart the devices that power digital rhetoric and re-shape, re-form, or revise them; Rieder’s work on physical computing and Brown’s tinkering both highlight the materiality of the digital.
Collapsing the distinctions between “real” and “virtual” is critical not only in terms of new interfaces, wearables, and ubiquitous computing, but also to remind us of less technical aspects of digital rhetoric, such as power relationships, labor practices of makers and users, and the differences of race, gender, and ability that digital rhetoric must account for if it is to avoid constructing an ideal user as the intended audience for persuasive uses of technology.

Our bodies also reside within social, physical, digital, and cultural networks: if we see embodiment as a key practice of digital rhetoric, we can also more readily see the powers and effects not just of digital, electronic networks, but how these social and cultural systems play a role. Kristin Arola’s presentation, “Ayaangwaamizin: Digital Texts, Cultural Rhetoric, and an Ethic of Care” was a compelling example of how we can bring cultural and digital rhetorics into productive conversation. We can also see progress being made in terms of expanding what has thus far been a Western-centric approach to digital rhetoric (produced by tracing its beginnings to the Western classical tradition) in collections such as Gustav Verhulsdonck and Marohang Limbu’s *Digital Rhetoric and Global Literacies*.

I would suggest that a current and significant gap yet exists in terms of connecting digital rhetoric (both theory and practice) to power differentials at play for differently embodied users; relatively little work is currently focused on issues of race, class, gender, or disability as specifically situated within a digital rhetoric context, and I believe it is important for the field to promote projects that address these constituents.
As a kind of mirror-image of the concern for keeping the body at the forefront of work in digital rhetoric is the question of whether systems that lack bodies (as we understand them) can themselves serve as audiences, rhetorical texts, or even rhetors in their own right. Johndan Johnson-Eilola has posited that software agents can act as texts that have a certain level of awareness; however, it is unclear whether these programs and devices they run are seen to have agency (or even consciousness). At IDRS, Elizabeth Losh questioned whether we ought not to be paying more attention to software agencies and potentially theorizing their interactions with each other as rhetorical communication. My response is that while I believe it is important for digital rhetoric to investigate these kinds of communication and consider such claims, I would nonetheless argue against imbuing software agents with rhetorical agency (much as I argue against animal rhetorics, above). However, even my argument doesn’t preclude examining and working with software agents as deployers of programmed agency—I always go back to the human motivation that lies in the code itself (following Latour’s explication of the embedded human biases in supposedly objective scientific instrumentation; see Latour, “Visualization and Cognition”).

In her IDRS presentation, Estee Beck takes as a starting point that

When the algorithms execute through code, the past agency and designs of the creators carry forward in a transactional invention giving way to a transformative iteration of an old context into a new understanding. In the age of digital rhetoric, … scholars may come to think of algorithms as quasi-rhetorical agents carrying forward the agency of human symbolic action.
She then carries out an analysis that provides a framework for identifying persuasive algorithms. Her point is not unpersuasive, but I would counter that carrying the rhetorical designs of their creators, even in instances where new contexts allow for differential applications of such design does not convey conscious motive or ability to consciously choose among available means—algorithms may be persuasive in the sense that they can engage rhetorical action, but they are not fully agentive as a result. Beck’s argument, though, is emblematic of the ways in which defining and enacting digital rhetoric is still in flux and an indication that key questions remain to be settled. And even though I resist her main argument at this time, I do agree that “our field is primed to consider the embedded social and cultural values in algorithms—how they operate, and how they affect change in machine and human behaviors.”

Perhaps a way forward is found in James J. Brown’s recently published *Ethical Programs*, which considers the way networked software and software agents travel through and infiltrate our lives, arguing that such systems can establish rhetorical space via such access—in works like Brown’s, software can serve rhetorical purposes and engage in rhetorical activity without necessarily becoming self-aware or conscious agents. Similarly, Kevin Brock and Ashley Kelly argue that there is a potential for code to perform rhetorical work and exist as a co-rhetor in the composition and expression of procedural arguments. I am hesitant to grant software agents the status of co-rhetors (at least, until we have complete and verifiable artificial intelligence), but Beck, Brock and Kelly, and Brown all push the field to consider where those lines should (or can) be drawn.

*code*
If software can function as an agent and machines can be audiences (and, indeed, most servers are constantly listening for messages and invitations), they can only do so based on the parameters, procedures, and algorithms that have been coded into them. As with any text, I would argue that code can be both rhetorically analyzed and rhetorically produced.

As with rhetorical approaches to writing, we can understand code through the lens of genre, and we can also examine what constitutes code literacies and the activities of coding communities. Kevin Brock and Ashley Kelly’s IDRS talk presented a framework for viewing code in terms of rhetorical genre, first hypothesizing that “code, as a form of written communication, possesses features of persuasive effort similar to and entirely distinct from those of more traditional discursive writing” and then examining how software developers “persuade one another to code in particular ways toward particular ends.” A rhetorical analysis of both code-as-text and coders-as-rhetors helps to uncover avenues of inquiry that situate code as a vehicle for rhetorical action.

A further complication in the question of the rhetorical properties of code and algorithm is raised by Annette Vee, who takes up the question of what happens when code can supersede and replace the rhetorical force of the law: “if rhetoricians continue to be interested in the probable, the possible, then we have to think about the construction of algorithms and code that generates writing and laws”—in essence, when taken together with the work of Brock, Kelly, and Beck, digital rhetoric must consider both the design and the consequences or outcomes of code.
One way to address these concerns about the nature of code is to take a more active role as coders of rhetorical algorithms ourselves, which is partly what Bill Hart-Davidson suggests in “run_progymnasmata: What Should We Teach When We Teach Machines Rhetoric?” In his IDRS talk, Hart-Davidson shows a series of projects that utilize computational rhetorics, which are a kind of antidote to the Shannon-Weaver methods of sequencing messages (indeed in these examples it is networks rather than texts that are manipulated and analyzed) to teach algorithms to perform rhetorical analyses. Tellingly, these algorithms can begin to detect rhetorical features of language, but cannot (yet) produce their own.

**infrastructure**

Code is, in a way, part of the technical infrastructure of digital rhetoric (particularly digital rhetoric practice). By technical infrastructure, I mean the mechanisms that allow electronic devices to proliferate and be used, the systems that run networks, the software tools that allow nearly anyone to expertly remix content across multiple modes and media. But digital rhetoric must also pay attention to the social infrastructure of digital production, the institutional and legal structures of knowledge management, and the scholarly infrastructures of academic production. Each kind of infrastructure resides in a black box, hidden away from surface examination; thus, understanding and investigating infrastructure requires the development of technical knowledge (in the case of technical infrastructure) and socio-cultural and institutional knowledge in the case of social and institutional infrastructures, respectively.

Much as doing research on computer games requires development of
expertise in gameplay, narrative, and mechanics that is developed by actually playing (not just observing) the game over a long period of time, so is it important for digital rhetoric scholars to take care not to only understand the surface of technical processes and procedures. Fully understanding technical infrastructure can both open up new insights into digital rhetoric and guard against a conflation of technical mechanism or algorithmic structure with rhetorical power or agency.

This category of infrastructure, however, is not just oriented toward code—it also includes access, accessibility, and usability. These components join the technical and social infrastructures to provide sustainable digital objects (and the lack of sustainable digital archives poses difficulties for scholars of digital rhetoric).

In each of these four categories—materiality/embodiment, machine audiences and software rhetors, code, and infrastructure—there are a great many possibilities for engaging, building, deploying, or studying digital rhetoric. And in a few years, as the field continues to mature, I may well re-visit Digital Rhetoric in light of new theories, methods, practices, and technologies. If we’re not all machines ourselves by then.

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