

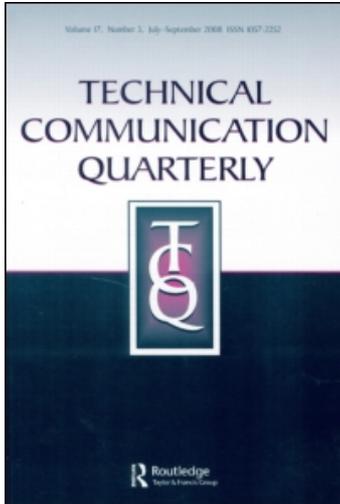
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Toward a Post-*Technê*—Or, Inventing Pedagogies for Professional Writing

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This article examines the concept of *technê* in relation to situatedness. *Technê* is conceived as techniques for situating bodies in contexts. Although many theorists and practitioners in technical communication are working from ecological and posthuman perspectives with regard to interface designs, this article argues for extending those perspectives to workplace and classroom situations. Starting from a Heideggerian reading of *technê*, the article moves toward the concept of post-*technê*, which remakes pedagogical techniques for writing and inventing in institutional contexts.

“There are good historical (as well as etymological) reasons...for broadening the definition of technology to include skills as well as machines.”

Jay David Bolter, *Writing Space* (15)

“Apparently, ‘technology’ was something ancient people *did*: they did not possess it, and, thankfully, it did not possess them.”

Frances Ranney, “What’s *Technê* Got to Do with It?” (21)

The concept of *technê* has undergone a surge of interest in the past two decades, partly because technology has come to encompass a large part of our daily lives, and its influence is growing. But many scholars today, as the 2002 special issue of *TCQ* (11.2) attests, argue for classical and revisionary concepts of *technê* that run counter to conceptions that reduce *technê* to an instrumental understanding of technology. Such a reductionism leads to a humanistic reading of the ancient concept. Joseph Petraglia, for example, continues to see *technê* as “a-contextual,” overly formal procedures, and argues that reducing rhetorical education to *technê* is problematic. For him, “the *technê*-centric classroom” has won out over philosophical rhetoric because of anxiety over the lack of writing skills in stu-

dents, but rhetoric cannot be reduced to the technical because it is more than that; as an art, it is not reducible to simple, objective skills (90–91). Although I agree with Petraglia's basic position on education, I do not agree with the reduction of *technê* to "technical rhetoric." Given the recent *TCQ* issue on *technê*, it seems clear that many writers and teachers are aligning themselves with an expanded understanding of the term. All of the lead articles are working to create links among *technê*, technology, the technical, and technique in ways that move *technê* away from an instrumental reading that sees technology as an object to be possessed by subjects and toward a reading of *technê* that sees the technical as one equal element in a larger, more complex set of relations. It is important that teachers see the related concept of technique in this kind of context. Technique is both a rational, conscious capacity to produce and an intuitive, unconscious ability to make, both of which are fundamental to *technê*.¹ This dual conception of technique moves *technê* away from a reductive, generic, a-contextual conception of the technical toward a sense that technique operates through human bodies in relation to all other bodies (animate and inanimate) in larger, more complex contexts.

For me, this notion of *technê* pushes the discussion away from a humanist conception of the subject that is caught in a subject/object dilemma (i.e., do humans control technology or does technology control humans?) toward one that is posthuman. Such a move does not do away with the human as much as it re-describes the human in terms of complexity.² The human and the technical are no longer seen in opposition but as operating together in complex ecologies. As Mark C. Taylor notes in *The Moment of Complexity*, "ecologies, immune systems, the development of multicellular organisms, and the processes of evolutionary genetics" all operate through what he calls "complex adaptive systems" (165). For Taylor, both biological and cultural complex adaptive systems remain open to their environments and adapt accordingly, situating agency and change as a product of complex developments that include technology. The reason the

¹James Dubinsky seeks to combine art (*technê*) and knack to return knack to our notion of skill. (See Richard Young's "Arts, Crafts, Gifts and Knacks" for the distinctions that Dubinsky is trying to undo.) Jay Gordon also looks at *technê* as something that gives us a certain amount of conscious control over chance while still recognizing the *kairotic*, "nontechnical," and intuitive elements of *technê*. Craft and craftiness both underlie more rational methods and make those methods applicable and even possible. Carlos Salinas attempts to link *technê* to both skill and savvy as well, setting these issues in the context of our contemporary image-based technologies. Ryan Moeller and Ken McAllister, perhaps even more than the others, work to move *technê* away from instrumental reason toward creativity, ingenuity, and unpredictability, giving a number of examples of *technê* as a combination of skill and habit.

²As N. Katherine Hayles notes in *How We Became Posthuman*, "The posthuman does not really mean the end of humanity" (286). We have always been posthuman (291) but are just now coming to recognize the situation from this perspective because the ubiquity of technology makes our relational complexity show up—an argument similar to Heidegger's that I discuss following.

subject/object dichotomy is a problem from the perspective of invention and pedagogy is that it operates on the presence/absence dichotomy; that is to say, it presupposes a stable, coherent presence that prefigures meaning.³ Invention, in this instance, is under the control or will of the subject, which forecloses open-ended invention that emerges out of complex adaptive systems. As N. Katherine Hayles argues in *How We Became Posthuman*, posthumanism operates not on presence/absence but on pattern/randomness. Pattern is (un)grounded in randomness; it is not a coherent subject. As Hayles puts it,

In this dialectic [pattern/randomness], meaning is not front-loaded into the system, and the origin does not act to ground signification.... Rather than proceeding along a trajectory toward a known end,...[complex] systems evolve toward an open future marked by contingency and unpredictability. (285)

Randomness is not coded as absence but as “plentitude”—“the creative ground from which pattern can emerge” (286). The model of subjectivity set up in the subject/object dichotomy simply does not apply to a situation that isn’t grounded in the presence/absence dichotomy. The assumption of autonomy, presence, and control ignores the ambient, unconscious, habitual elements of invention that emerge out of the complex systems that human bodies inhabit.

It is in such a complex ecology, or network, that I wish to situate *technê*—more specifically a post-*technê*—for professional/technical writers who operate through complex ecologies of institutions, technologies, and (human) bodies. Posthumanism creates a space for moving away from a view of *technê*, such as Petraglia’s toward a view of *technê* that is more commensurate with a pedagogy based on invention. Remaking *technê* from such a posthuman perspective moves our conceptions of pedagogy from Petraglia’s “*technê*-centric” classroom and toward post-*technê*—toward techniques for integrating humans with technological and institutional environments—with the goal of invention.

HIGH-TECHNÊ: TOWARD THE POSTHUMAN

To get the most out of the concept of technique, the shift in historical context from classical Greece to the postmodern, technological present should be taken into account. In his book on the history of rhetoric, Renato Barilli notes that the

³For more on the problematic nature of the liberal humanist subject in relation to *technê*, in addition to the extended discussions in Hayles, see Janet Atwill’s *Rhetoric Reclaimed*, in which she argues that humanism problematically takes a historically specific model of subjectivity from classical Greek culture and retroactively universalizes its common features (14–15, 23). For more on the concept of ecology in relation to writing and technology, see Margaret Syverson’s *The Wealth of Reality: An Ecology of Composition*.

suffix “ic” in rhetoric implies *technê*, or the combination of art and technique. So in one sense rhetoricians are also technicians whose “task is to *intervene* in ‘political’ occasions” (x; emphasis added). Rhetorical technique in this context embraces all human concerns and thus can never be as specialized or as technical as analytics (or modern science) as Petraglia and others imagine. Barilli concludes, “In the context of rhetoric, the technical will always be *side by side* with the non-technical” (x; emphasis added). Rhetoric, then, puts abstract, technical knowledge and lived, habitual knowledge on equal footing—a parity that is thoroughly occasional. However, after one reads R. L. Rutsky’s *High-Technê*, it becomes clear that the complex, ecological contexts that exist today no longer reproduce the classical civic space in which the subject intervenes via rhetoric/technique. Recognizing that this new context is emerging, Rutsky theorizes technology and *technê*’s role in it through a reading of Martin Heidegger. A humanist reading of classical rhetorical theory tends to uphold the concept of the human subject in control of the technological object. Heidegger’s view of *technê*, on the other hand, redefines the human relationship with technology as one that can no longer be reduced to deliberate human intervention or to a narrow view of human control over the contextual situations—especially human control via technology or technique. For Rutsky, the reality of high tech is that the alliance of technology, nature, and culture has become its own ecological process, or complex adaptive system largely functioning outside of direct human control. At root, Heidegger presents a proto-posthumanist perspective.⁴ Rather than see the subject as central, Heidegger begins with technological domination but turns that toward the subject as a body in a complex network of relations that influences the body and is influenced by the body. This move to posthumanism has important implications for a concept of *technê*: Technique consciously transferred through teaching cannot be simply applied to all occasions as an object controlled by a subject.

For Heidegger, the essence of technology is nothing technological, as he argues in “The Question Concerning Technology.” Rather, it reveals certain ways of being and seeing. After a polemic on the destructiveness of an instrumental perspective on and use of technology (enframing) and its use, Heidegger performs a *dissoi logoi*. Reflecting on enframing, he recognizes that the instrumen-

⁴For more on Heidegger’s link to posthumanism, see Arthur Kroker’s “Hyper-Heidegger.” For a particularly clear articulation of posthumanism, see Tamise Van Pelt’s “The Question Concerning Theory.” For more on Heidegger and ecology, see Charles Taylor’s “Heidegger, Language, and Ecology.” Taylor emphasizes the importance of language to this larger ecological relationship and the importance of seeing Heidegger as a nonsubjectivist. For more on posthumanism and rhetoric, see Collin Brooke’s “Forgetting to Be (Post)Human;” John Muckelbauer and Debra Hawhee’s “Posthuman Rhetorics;” and Thomas Rickert’s “Engaging Modernisms, Emerging Posthumanisms, and the Rhetorics of Doing.” For more on Heidegger and *technê*/invention, see Lynn Worsham’s “The Question Concerning Invention.”

tal conception/implementation of technology is also a way of revealing that allows us to see one truth about the world; that is, by pushing us to see the world's limits, technology forces us to see ourselves in an ecological relationship with itself, nature, and language. This ecological reading of Heidegger is echoed by Graham Harmon, who, in *Tool-Being*, argues against both human- and language-centered readings of Heidegger in favor of reading him as being fundamentally concerned with bodies in the world.⁵ Heidegger conceives the world not in terms of subject/object (presence-at-hand) but through ecological relationships in the world (ready-to-hand). Readiness-to-hand is not just about the relations between subjects and objects but between all bodies. Just as *dasein* (Heidegger's nonsubjectivist word for human being) understands things only as they show up in certain ecological constellations, all bodies understand each other and *dasein* only through such relationships. For Harmon, understanding is nothing subjective. Speaking ecologically, as Mark Taylor does, animals and plants understand and adjust to their environments as much as humans do. Harmon pushes this concept even further and applies it to inanimate objects: Rocks colliding in space only understand each other through the point of contact; all things show up only as something specific to a particular constellation or to a particular encounter. Readiness-to-hand, then, is not about technology's usefulness for *dasein* but the immediate relation of one thing to another thing. It does not subsume the world under *dasein* but puts *dasein* on an equal plane as a body in relation to all other bodies.

From this perspective, a humanist position that directly opposes a subject to an object and then devalues technology as instrumental can be just as problematic as technological domination. As Janet Atwill notes in *Rhetoric Reclaimed*, the connection between the humanistic and instrumental positions is not one of opposition but of congruence. An instrumental position presupposes an autonomous humanist subject, based in abstract universal values, that controls and implements tools and technologies as objects (8). As Heidegger argues in *Poetry, Language, Thought*, technological domination is essentially the imposition of human will through technology (116). Such an extension of human will can come to understand only an instrumental view of technology (and consequently *technê*) and conceal an ecological perspective rather than reveal an understanding of ecology to us. The link Heidegger is seeking through rethinking technology via the concept of *technê* is that revealing is also the essence of art, but "only if reflection on art, for its part, does not shut its eyes to the constellation of truth" ("Question" 35). At the end of "The Question Concerning

⁵In *Embodying Technêsis*, Mark Hansen argues that Heidegger is a linguistic determinist. Although those elements can be read into Heidegger, Hansen's treatment is unfortunately overly polemical, ignoring all of the ecological elements in Heidegger's work. In his polemic against Heidegger, Freud, Derrida, Lacan, Foucault, and Deleuze and Guattari, he paints them all as linguistic determinists who ignore the body, which none of them really do.

Technology,” Heidegger makes it clear that he is not talking about art as subjective aesthetics. He hopes that “in our sheer aesthetic-mindedness” we will not lose sight of “the coming to presence of art” (35). Heidegger does not fall into a modern opposition of technological instrumentality versus a transcendent aesthetic.⁶ Art, rather than aesthetics, is “the saying of the world and earth” (*Poetry* 74)—expressions of bodily relations not internal subjectivities. Both technology and aesthetics are connected and viewed as art, as *technê*. As *technê* they produce ways of seeing and ways of being; they produce constellations, which in turn produce possible ways for humans to be in relation to the world.

Rutsky attempts to articulate this realization in the context of the late twentieth century. His notion of high-*technê* encompasses both aesthetics and technology into a larger, evolving system. In addition to providing a utilitarian function through an assembly line that produces products, technology is also a vital part of an aesthetic process through which culture is continually reproduced. The key shift to conceptualizing technology as culture rather than as tool happens in the shift from industrial capitalism to consumer capitalism—from production to consumption. As Rutsky puts it, the Fordist slogan “form follows function” gives way to the consumer slogan “styling follows sales” (100). Marketing and product design acknowledge that nonutilitarian aspects of style cannot be subordinated to function. For example, almost all shoes are functional; which ones sell depends on style. Utility becomes an accessory to consumption, and any purely functional conception of technology is subordinated to mass cultural reproduction. Our contemporary conception of technology is intimately linked to a complex notion of aesthetics, one in which (productive) technology and a (consumptive) “high-tech” style come hand-in-hand. In this constellation of aesthetics, technology, and culture, high-*technê* is the art of bringing forth elements in the world, “unsecuring” them, and bringing them into cultural representation. Reconceiving *technê* in this way unsecures technology from use value and art from aesthetic value: (1) a utilitarian/instrumentalist conception of technology seeks to secure, fix, or regulate objects in terms of their potential use to humans; (2) a humanist/subjectivist aesthetics tries to fix eternal aesthetic value; and (3) high-*technê* is an artistic practice that emerges from a constellation of humans, technology, culture, and the world that “continually breaks things free of a stable context or fixed representation, representing them instead as part of an ongoing process or movement” (105). The key point in Rutsky is that being human in the contemporary context is not reduced to

⁶Robert Johnson and Frances Ranney make the distinction between instrumental “design” and fine art that I think Heidegger is after here. They see *technê* as “an inventively systematic knowledge that [is] aimed toward previously thought-out, but not pre-determined, ends” (239). Technique, in other words, can be partially, at least, thought out ahead of time, but its contextual enaction in a complex, ecological situation cannot be predetermined. Likewise, the locus of a esthetic production is not in a subject but in the contextual enaction, in the doing.

exerting human will through technology; it is not about intervening through technology but about dwelling with/in technology, with/in a culture that is intimately intertwined with technology in multiple, complex ways.

The development of such a complex culture creates the conditions of possibility for a posthumanist conception of the subject. Tamise Van Pelt characterizes Heidegger's position as antihumanist, and those of more recent theorists such as N. Katherine Hayles and Espen Aarseth as posthumanists ("Question"). But under Rutsky's reading, a posthumanist position clearly has its roots in Heidegger. An antihumanist stance would privilege technology over the human. Heidegger shows quite often that he is critical of technological dominance, but he is also critical of humanistic use of technology for domination. This puts him outside of the humanist, antihumanist dialectic and moves him toward something more like posthumanism. Hayles characterizes posthumanism as locating thought and action in the complexity of distributed cognitive environments. The complex navigation of a ship, for example, requires the distribution of decision making across a complex interrelationship of technology, humans, and nature. For Hayles, "modern humans are capable of more sophisticated cognition than cavemen not because moderns are smarter, . . . but because they have constructed smarter environments in which to work" (289). Posthumanism does not usurp the human, but sees human development extended through distributed cognitive environments. Hayles writes:

No longer is human will seen as the source from which emanates mastery necessary to dominate and control the environment. Rather, the distributed cognition of the emergent human subject correlates with—in Bateson's phrase, becomes a metaphor for—the distributed cognitive system as a whole, in which "thinking" is done by both human and nonhuman actors. (290)

When human environments become so overwhelming and human interactions with it are so complex that "they are no longer subject to rational prediction and control" (Rutsky 106), our conception of technology is forced to change its (subjective or objective) deterministic view. Rutsky doesn't do away with human agency. Instead, he defines human subjects by their "ability to exert a sense of productive agency that is not based on autonomy and mastery but on relationality" (148).

Thomas Rickert in "In the House of Doing: Ambience, Rhetoric, *Kairos*" (*JAC*, forthcoming) offers a conception of the posthuman subject based on relationality in terms of complexity theory and emergence and links it to the concept of ambience.

[A]mbience connotes distribution, co-adaptation, and emergence, but it adds an emphasis to the constitutive role of the overall environment. . . . The ambient is immersive in that it is *postconscious* and auratic, being keyed to various levels of attention that are nevertheless always in play at a given moment.

This notion of postconsciousness, as I read it, is related to Michael Polanyi's bodily consciousness. However, in postconsciousness the body is distributed in its environment. One of Rickert's primary examples is the effort at MIT to create an ambient room.⁷ The researchers are concerned with processing large amounts of information, and they take as their point of departure the fact that humans have a high capacity for processing background information. People know the weather from ambient cues such as light, temperature, sound, air flow—none of which is necessarily processed consciously. Most interface designers, they argue, don't take this level of information processing into account. The future goal of the MIT research is to construct a room "as a personal interface *environment*" in which "common appliances like lamps or air conditioners could be networked and re-engineered to supply various kinds of information" ("In the House"). This view sees cognition, thinking, and invention as being beyond the autonomous, conscious, willing subject. A writer is not merely in a situation but is a part of it and is constituted by it. A human body, a text, or an act is the product not simply of foregrounded thought but of complex developments in the ambient environment. The key, as Harmon notes, is not that there are different things that operate differently in different contexts but that bodies, technologies, and texts are their context (23). There is no separation. From the perspective of ambience, there is no communications triangle with autonomous but connected points. There is only relationality—*technê* emerges only through enacting relationships.⁸ Rickert seeks to integrate a network logic with an ambient logic through Heidegger. This is a new configuration that, for me, moves closer to an ecological basis for post-*technê*. Finally, technique becomes a matter of operating in the ambient environment.

POST-TECHNÊ: PHYSIS AND PORTABILITY

Just as there are people working on making rooms into interfaces, researchers in professional and technical writing have been working on making computer interfaces from posthuman perspectives. But what I am proposing is to turn this work

⁷Rickert's two key references are Hiroshi Ishii et al., "ambientROOM: Integrating Ambient Media with Architectural Space," and Craig Wisneski et al., "Ambient Displays: Turning Architectural Space into an Interface between People and Digital Information."

⁸As Ranney notes, "'Technology' was something ancient people *did*: they did not possess it and...it did not possess them" (211). Ranney is right there with Heidegger: Dasein does not possess the object or the other way around—the subject and the object only show up through their interaction or their enaction. I don't see Ranney emphasizing this as much as she perhaps could. Heidegger's call is for a return to a notion of technology that is more in line with Being (ecological reality). All of Heidegger's work investigates our contemporary forgetting of Being as it once was understood or lived by the ancient Greeks. Rutsky accepts Heidegger's reading of *technê* precisely because it is more true to the Greek conception than many modernist readings of *technê* that see it as purely technical or instrumental, an understanding that conceals the essence of embodied experience expressed in the Greek concept.

toward pedagogy and start thinking about techniques, methods, and heuristics as interfaces in ambient rooms. Such a move would constitute a turn from *technê* to post-*technê*. A posthuman understanding of *technê* would mean that teachers accept the ecological and ambient nature of rhetorical situations and begin to develop techniques for simultaneously enacting and operating in these complex, evolving contexts. Such a post-*technê* would follow Heidegger in viewing technique as a way of—a method for—revealing constellations or ecological realities within these situations.⁹ Even though Heidegger is against technological domination, he shows only that technology conceals and reveals; that is, it creates certain circumstances and relations that foreclose but also open up possibilities. If *technê* is a technology in this sense as well as a technique that operates through both conscious and unconscious means, then it becomes crucial to think about how techniques situate students within particular contexts with any and all objects—a building, a text, a human body, a rock. When Bolter notes that technology can encompass something as abstract as skills as well as something as concrete as machines, and Harmon reads Heidegger as recognizing that any body reveals and conceals through its relations with other bodies, it is not much of a stretch to begin seeing techniques, methods, or heuristics as equally important elements in an ambient situation. Every element contributes to the situation being what it is and contributes to the learning, thinking, and understanding that emerges in that context and through that interface. Technique as post-*technê*, then, should set up constellations of relations that allow its users to see something as something else—that is, to see in a new way through those constellations of relations. To do so, teaching techniques would have to situate bodies within their environments and enact bodily, ambient elements in the service of learning in addition to employing consciously taught elements. Two key questions arise for me out of this perspective: (1) if agency is diminished in the subject, what is the nature of agency or power that drives post-*technê*, and (2) can techniques derived to operate through this notion of power be portable from one context to another with any efficacy?

If the seat of agency is no longer the conscious, autonomous subject, then it is important to flesh out the locus of agency in distributed cognition. The editors of the special *TCQ* issue note that Janet Atwill's notion of *technê* as a "constant force of 'intervention and invention'" serves as one of the underlying premises of the issue (Bridgeford and Moore 125). If *technê* has its own force, beyond that of the subject as a point of origin and control, what is the nature of this power? Atwill notes that self-acting spontaneity (to automaton), marks the limit of human inter-

⁹Kroker also makes the connection between *technê* and method in Heidegger: "Heidegger not only claimed that technological experience was, above all, a method, but his own writing paralleled the world picture of technology as method by making of his own thought a method of technological revelation. In meditating on Heidegger, we are suddenly brought (technically) close to that which is (metaphysically) distant."

vention (90), giving *physis* power through its own ecological, evolutionary movement via the convergence of all four causes (87). Aristotelian theory argues that everything has four causes: (1) material cause—what the thing is made of; (2) efficient cause—the agent, beginning, or source that brings the thing into existence; (3) formal cause—the thing’s abstract structure or design; and (4) final cause—the thing’s purpose or aim. A house, for example, would have a material cause (bricks), efficient cause (builder), formal cause (blueprint), and final cause (house). Efficient cause generally resembles mechanistic notions of cause and effect, where motion requires an outside cause such as a human agent. Aristotle, however, argued that nature has its own internal cause. Looking at biological organisms, he thought that they had to possess the form or plan for their development internally—that is, in the material. The formal cause creates the self-motivation to aim for its final completion—that is, to play out its potential or, in other words, to strive to fulfill the form natural to its species. The combination of material, formal, and final causes creates the conditions for emergence as the efficient cause. Extending this principle of emergence, any constellation has a form or structure natural to its composition and consequently plays out the conditions of possibility established by that structure.

In “The Question Concerning Technology” Heidegger discusses Aristotle’s theory of four causes, arguing that a contemporary focus on instrumentality has made efficient cause primary and has misattributed efficient cause to autonomous human will. Reducing cause to efficient cause “[veils cause] in darkness with respect to what it is” (6). For Heidegger, the intellectual tradition from which Aristotle is speaking is incommensurate with contemporary notions of cause and effect.¹⁰ Rather, the four causes are “co-responsible;” that is, they are “ways, all belonging at once to each other, of being responsible for something else” (7). This co-responsibility should not be read from a contemporary notion of humanistic morality: “The four ways of being responsible bring something into appearance. They let it come forth into presencing. They set it free to that place.... The principle characteristic of being responsible is this starting something on its way to arrival” (9). It is to be responsible for an occasioning or inducing to go forward. Importantly for Heidegger, “Not only handicraft manufacture, not only artistic and poetical bringing into appearance and concrete imagery, is bringing-forth, *poiesis*. *Physis* also, the arising of something from itself, is a bringing-forth, *poiesis*. *Physis* is indeed *poiesis* in the highest sense” (10).

Heidegger’s recognition that something can arise spontaneously from itself and its situation is a key to moving beyond instrumentality and humanism with regard to invention. Spontaneity and chance are not under human control but are the outcome of complex sets of relations, making *physis* a source of agency for *technê*. Diane Da-

¹⁰For more on Heidegger’s reading of Aristotle in relation to power/force, see his book *Aristotle’s Metaphysics: On the Essence of Actuality and Force*.

vis argues that technology, *technê*, and technique can not escape *kairos* (120); they are caught and enframed in emerging contexts. For Davis, “*technê* is always situated within the wild excesses of a nonrational *physis*.... *Technê* is simply one of the phases of *physis*. *Technê*, that is, turns out to be a ‘little game’ *physis* plays” (121).¹¹ *Kairos* is not the opposite of *technê* but its very ground; every technique is (un)grounded in *physis*, powered by its *kairos*. Teachers and writers can have a conscious technique, but the technique in practice involves an ambient coresponsibility with *physis*.

There are pedagogical techniques (methods and heuristics) that do attempt to utilize this conception of *physis* as power rather than human as cause, and I want to look at two of them: one from Atwill and one from Cynthia Haynes. Janet Atwill argues, from an Aristotelian perspective, against a humanist/instrumental reading of *technê* and develops a concept of *technê* based on a sophistic Greek model. Atwill argues that Aristotle’s notion of productive knowledge has been lost because rhetoric (and consequently *technê*) has been cast in terms of theoretical (subjective) and/or practical (objective) knowledge. For her, productive knowledge has three primary characteristics that could ground a renewed concept of *technê* outside of a liberal humanist model: (1) it is never static (never simply objective or subjective) but a *dynamis* (power) that utilizes transferable strategies contingent on situation and purpose; (2) it resists identification with a normative subject because “every exchange of *technê* creates a different order of power—different subjectivities;” and (3) it is not a subjectivity or virtue but a capacity or power to transgress existing boundaries—that is, to challenge and redefine “relations of power” while emphasizing production over objective end-product” (7). Speaking from such a position, Atwill proposes a transferable strategy for her notion of power and subjectivity: (1) discern a point of indeterminacy in the situation, (2) overreach a boundary that the situation places on you, and (3) intervene in the systems of classification and standards of value set up within and by the situation (45). This heuristic model places a body within a situation and operates on the occasionality and spontaneity of *physis*. Although her emphasis on intervention comes close to a reemphasis of a subject that implicitly preexists the situation and can will to intervene in it—she talks of “technical mastery of the contingent” (95)—her example of a navigator illustrates the point that *physis* can be seen as the very ground of *technê*. Atwill writes, “The art of the helmsman can only be exercised within the framework of the uncertainty and instability of the sea” (95). The navigator does not have mastery over *physis* but is carried along with it, works in

¹¹Both Davis (“Breaking Up”) and Vitanza (“Three Countertheses”) are skeptical of *technê* and technique (method) conceived as technical, equating them with a humanist frame, although Vitanza acknowledges a possible distinction between a reductive notion of *technê* and a more open sense of method (171, n. 14). I wonder in this essay if *technê*, as this kind of method, can operate from a posthuman frame. If it can, it seems to me the method would have to be about situating bodies in contexts rather than directly producing texts or knowledges as if from a Fordist production line.

relationship with it. Paradoxically, the navigator works against but alongside it. *Physis* is the ground, or the conditions of possibility, for the helmsman's art (*technê*), not an object over which the subject has mastery via technique. The navigator's technical skill does not necessarily change the sea but allows him/her to operate coresponsibly within it.

Another example of a conscious pedagogical technique that involves a co-responsibility with *physis* comes from Cynthia Haynes, who, in the tradition of Heidegger, articulates a technique for navigating *physis* as ground/lessness. She also operates across the metaphor of the ocean and the navigator that Atwill is working with and finds a technique that achieves a certain level of inventive, open-endedness.

Give your students (or yourselves) this assignment: Write something offshore, i.e., put a message in a bottle, in response to this statement: WE ARE ALL BOAT PEOPLE. Now take your paper and make a paper boat. Leave it in a prominent place such as a doorstep, a computer terminal, the university administration building, or wear it on your clothes, whatever. Then imagine its trajectory, where it will go, who will see it, what they will think (what you would LIKE them to think). And then, put that in writing; trace the trajectories, and give it ballast—so that the main question you should ask yourself as you write is this: WILL IT FLOAT? (“Writing Offshore”)

What Haynes proposes is a technique for mapping *kairos* that more directly comes out of Heidegger's sense of cause or agency as coresponsibility. The goal for Haynes's technique is not intervention as much as invention through the human body's situatedness in a context that draws on the power of a particular constellation. Like Haynes's discussion of navigation, Haynes utilizes human codevelopment with technique (technology) and physical context as a distributed cognitive environment. Certainly there are conscious elements to the design of this technique, as there are to the design of navigation systems, but these designs are created to enact unconscious, ambient coresponsibility.

Atwill's and Haynes's pedagogical techniques represent two kinds of doing. Atwill's heuristic emphasizes the subject's power external to the situation that prompts the action—that is, the intervention. Haynes's technique seems to rely more on situating a body in a never-static context that prompts the enaction, the opening up of that constellation's possibilities. Like Haynes, Moeller and McAllister, in “Playing with *Technê*,” want to see *technê* as emergent rather than instrumental. Invoking Heidegger's recognition that tool use is not purely objective, they are for a conception of *technê* that has a source of creative power inherent in it (186).¹² For them, “*Technê* is not the act of hammering, nor is it the hammer it-

¹²Moeller and McAllister, however, conclude, with an unfortunate choice of terms, by seeing *technê* as “utterly human” (204). But embodiment pulls creative power from the human grasp and puts it into the realm of context, *kairos*, and *physis* that humans can't immediately control. They know this, but still fall back on the value of the human and what appears to be a humanist reading of Heidegger.

self. Rather, it is the way of the hammer” (185). This example of the hammer, taken from Heidegger’s famous tool-analysis in *Being and Time*, doesn’t put emphasis on the act (intervening) but on the “way” of the hammer—that is, the conditions of possibility inherent within its structure when it is put into play within a productive situation. The way of the hammer put into an ecological system with a human, a chisel, and a block of marble creates a path toward a statue. This constellation opens up the possibility that a statue will be its end result. When a human body enters into a situation, the new form taken by that new constellation plays out its own logic. This emphasis on specific contextual enactment paradoxically makes Haynes’s technique more portable and thus more adaptable than Atwill’s. Both heuristics are general in some sense; they can be applied to various pedagogical situations, but Haynes’s is closer to utilizing all three criteria I’m using to characterize post-*technê*: placing a body within a situation, utilizing the power of that situation, and enacting ambient elements of that situation in the service of invention. A post-*technê* doesn’t do away with intension as much as it adds a layer of complexity beneath it; that is, it adds an ambient level of cognition. Both action and enaction, thus, become coresponsible.

Nevertheless, the way of any particular technique could make certain positive relations to the world possible in some situations and in other enactments could create problematic relations. For example, although a hammer is a good tool to have in particular situations, it can sometimes be ineffectual or even damaging. The question arises whether a general technique that is transferable can adequately apply to various pedagogical situations. How would one possibly be able to anticipate the effects of a technique in the teaching situation at hand? In *Gorgias and the New Sophistic Rhetoric*, Bruce McComiskey offers one possible solution. He argues that the close connection between *kairos* and *technê* means that any technique has to be analyzed in particular contexts. He follows Gorgias’s *technê*, which is based on *kairos*, noting that

because Gorgias’s epistemology is relativistic and governed by *kairos*, his *technê* is empirical; because no two aesthetic, formal aspects of any *logos* will be effective in any two *kairotic* situations, Gorgias’s *technê* involves empirically testing and implementing in each individual communicative situation the linguistic rhetorical choices that are, at that particular time and place, most effective. (30)

The only way, then, to get a sense of the possible effects of a technique is to enact it in a specific kind of situation. The enaction would then need to regularly produce more situationally specific techniques and regularly engage them in that specific kind of situation. For example, a pedagogy for post-*technê* would need to be enacted in workplace contexts to both produce and reproduce techniques specifically for that professional or technical writing situation. Over time, and through practice, the student-rhetor who enacts these techniques in a specific workplace will

get a sense of how to develop techniques that operate in those specific kinds of situations and would better anticipate the conditions of possibility of that enaction. *Technê* at this point would begin to operate both consciously and unconsciously. Moreover, as post-*technê*, it would be driven by the situation, not just the subject or the subject's particular desire to intervene.¹³

TECHNIQUE: A PEDAGOGY FOR POST-*TECHNÊ*

Post-*technê*, as it has developed through this article, is the use of techniques for situating bodies within ecological contexts in ways that reveal models for enacting that open up the potential for invention, especially the invention of new techniques. Technique in post-*technê* is happening at two pedagogical levels: (1) the techniques, heuristics, and methods that teachers use to situate students in (ambient) learning contexts and (2) the techniques the students produce in those specific contexts, some of which are conscious and some of which remain bodily and environmental. From this perspective, power, the subject, and discourse are not preexistent entities but rather products of complex sets of relations. Current trends in genre theory (Bawarshi) and activity theory (Russell and Bazerman) represent recent attempts to deal with the complexity of rhetorical situations. Post-*technê* differs from them in emphasis. Genre theory starts with the structure of a preestablished genre (though Bawarshi does argue that new genres are also invented out of the process), and activity theory starts with a structural model not unlike an updated version of the communications triangle. A post-*technê* that is more attuned to *kairos*, emergence, and ambience starts with the structure of particular constellations and the invention of techniques for and out of those specific occasions. In "Institutional Invention," Louise Wetherbee Phelps turns this perspective toward inventing within institutional structures. Working out of complexity theory, as Taylor and Hayles do, she argues that invention is "an attribute of a system" (70) that emerges from complex self-organization (77). Viewing institutional structure in this way means that those who work within it must become radically inventive and continually adaptive. Phelps is specifically interested in academic institutions and the leadership roles of writing program administrators (WPAs) and particularly administrators in the process of creating a new program or department. These leaders should make invention show up as a possibility in these contexts and create

¹³Such an embodied conception means that *technê* is both craft and cunning (Gordon 150), methodical and *kairotic*, technical and embodied in *physis*. Intuition and cunning emerge from being embodied in contexts while enacting methods (they don't come from nowhere). Embodiment pulls creative power from the human grasp and puts it into the realm of context, *kairos*, and *physis*, but it also brings the power and knowledge from the contexts into our bodies, giving humans the ability to anticipate intuitively some of the effects of our enactments of techniques.

environments that afford invention. Analogously, professional writing teachers should work to make workplace contexts show up as sites of invention.

If post-*technê* is a set of techniques that allows teachers to open up or reveal elements of a situation in a way that allows students to interact with and live in that distributed, ambient environment (the art of enacting methods in contexts), then one of the better examples of such an approach in professional writing is expressed in Jim Henry's book, *Writing Workplace Cultures*. Henry creates a method for mapping out contexts and linking workplace writing to academic knowledge, both of which are fundamentally institutional. Henry's book sets out to detail his strategy for linking both of these institutional contexts in a way that would transform discourse practices in each. If the key to *technê* is empirically testing techniques for specific contexts, as McComiskey contends, then Henry again provides a good model. The book outlines seven years of his course, "Cultures of Professional Writing," through which he developed his pedagogical technique, gathered his data, and empirically tested and refined his method. Following Foucault¹⁴ and Lyotard, Henry acknowledges no totalizing account, no new theory or structural model. The goal of his post-*technê*, which is based on Foucauldian archaeology and feminist ethnography, is not to undo the institutions but to remake, or rearticulate, the discourses, the subjectivities, and the lines of power that emerge from them. His method places student-worker bodies at the focal point of their own ecologies¹⁵ at the point of transformation and gives them a situated strategy for revealing and relinking discursive shards or narratives that opens possibilities for intervention into their own workplace cultures. In such a pedagogy, preexistent generic structures or models of activity aren't necessarily portable. Once they enter into new constellations of relations, they are rearticulated and reinvented.

Though Henry does not explicitly articulate his method as such, much less designate it precisely in terms of *technê*, the technique he uses in his course can be abstracted from his book. I see four basic elements to his method: (1) map the

¹⁴In *Mapping the Present: Heidegger, Foucault, and the Project of a Spatial History*, Stuart Elden argues that knowledge of Heidegger is fundamental to understanding Foucault. In addition to Foucault, in his *The Order of Things*, relying on Heidegger's critique of humanism, he also finds Heidegger's use of space critical to his historical studies. Harmon, in *Tool-Being*, notes that *Being and Time* really has nothing to do with time but is all about bodies in space. Elden seems to take a similar perspective and sees Heidegger's emphasis on bodies and constellations in Foucault's archeological projects. His works are spatial histories rather than histories of space, in that the archeological method is all spatial description with no subjects and no interpretation. I'm reading Henry's use of Foucault from this connection to Heidegger.

¹⁵Heidegger notes that Nietzsche placed the body first, methodologically. Nietzsche writes, "Essential: to set out from the *body* and to use it as a guideline" (Nietzsche qtd. in *Nietzsche* 134). This is not the conscious mind of Descartes but the body that lives in the overall flow of *physis*. The goal of such a methodology is to follow from the structure of the body as it is embodied in the structure of a situation.

institutional dig, (2) uncover discursive shards, (3) link to other shards and sites, and (4) intervene in and reform discursive formations. First, Henry asks his students, who are typically researching writing in their own workplaces, to situate themselves among the forces that produce the emergence of their subjectivities. This mapping is done both in terms of the academic institutional discourse and the workplace institutional discourse. The students look at the theories and values of each and how those discourses situate them. Second, students create an “inventory” of these sites, especially from their workplaces. They approach their work site as if they were doing ethnographic fieldwork and seek to uncover as many of their organizations’ writing practices and writing positions (reporter, indexer, editor, etc.) as they can. Third, they seek to link these inventory sites and shards to larger complexities. All of these sites and shards imply ecological connections to larger institutional, economic, and social complexities. Academic theories, like Heidegger’s theory of technology, come in to make the linkages show up and to make connections to the workplace writing practices show up. Henry asks students to link these across affect and desire, which often don’t show up in either institutional discourse. Fourth, he asks his students to get involved in the construction of the sites and subjectivities in their workplaces. Students need to work from below to bring in these shards and links to their writing practices, their discussions and meetings with bosses and colleagues, and their collaborative writing projects to situate themselves within those institutions and their narratives.

The student-workers may not be able to fully or even partially rewrite the company’s meta-narratives from below, but they can change how those meta-narratives are enacted within the ecology of the corporation; their agency comes from their situatedness in the complex ecology. Henry argues that in new corporate contexts, hierarchies are moving toward network logics because doing so is becoming most economically reasonable for the institutions. To maximize (discursive) profit, organizations have to become more *kairotic*, responsive to the ecological realities that fall outside of immediate corporate control. Henry (16) quotes Shoshana Zuboff: “When work becomes synonymous with responsiveness to data, it engenders inquiry and dialogue, thus opening the way for workers to envision new possibilities and fresh alternatives to the reigning definitions of process, product, and organization” (qtd. in Zuboff 6). If it becomes profitable for corporations to listen to their workers in the hope of finding more productive discourses, practices, or even subjectivities, then the potential is there for student-workers to change the way those narratives are put into practice, if not alter the meta-narratives themselves. This change in perspective is precisely the appeal Phelps makes to academic leaders: to create an institutional structure that fosters invention. Henry’s pedagogy seeks to situate student bodies in just this kind of institutional environment. For Henry, “work at the level of discursive

constructions of the subject always entails work at the level of social systems as intertwined with discursive processes” (164). Because the student body and the institution are mutually caught up in these constellations, his technique for situating the students in the multiple ecologies and systems in which they operate places them in a position to produce effects and affects in those constellations, and it shifts invention away from hierarchy toward the complex networked system itself.

This shift in perspective not only changes the meaning of the subject but also the meaning of intervention. Henry’s model of intervention is not only about a direct, conscious attempt to create specific change (in the institution, the subject, or the discourse). When I read Henry’s model from Heidegger’s perspective, it is clear that just being in a situation and enacting what the body knows, doing what the body does, linking the body up to that context changes the ecology. This is the difference between doing as action and doing as enaction. For example, as a new assistant professor I did not come into my department trying to immediately change things to the way I thought they should be. Rather, I did my best to integrate myself into the institutional and curricular structure. But in doing so, that situation is changed. Courses have happened that wouldn’t have otherwise happened. Arguments have been made that wouldn’t have been articulated. Advising practices have changed. Conversations have changed. The situation is becoming something other than (more than?) what it would have been in my absence. And what would I be (doing) if I took a different job? Would my research agenda have taken a completely different path? Would I even be writing this article? Would I even be thinking about these issues? Would I be developing different teaching techniques? Phelps notes, “In complex biological and human systems, . . . subsystems (e.g., species in biology or, in an institution, different practical or disciplinary domains) co-evolve and thus change the context in which others evolve” (78). This is the kind of change, or intervention, I am interested in for the conception of post-*technê* as it applies to invention and pedagogy. Henry’s intervention seems to teeter somewhere between Atwill and Haynes, and between action and enaction. Workplace contexts can be altered just by being there, through our navigation, our integration and coevolution. Such intervention is not necessarily consciously planned and achieved. It is not that decisions do not happen. Even when teachers, students, or workers consciously invent things such as techniques, the decisions to do so are products of complex, ambient ecologies. In Hayles, pattern is built out of randomness; in Rutsky, culture functions in conjunction with technology; and in Davis, *technê* operates on *physis*. It is not that these things are the same but that they are coresponsible.

Intervention as enaction becomes much closer to its neighboring concept: invention. Just as Aristotle extracts rhetoric from its particular civic context rather than bringing an abstract theory to that context, Henry’s pedagogy positions stu-

dents to recognize how they might do the same: building techniques, “machines,” out of the conceptual and material technologies with/in their own particular ecologies.¹⁶ In 1989, Elizabeth Tebeaux recognized that “many jobs our students will hold a decade from now do not yet exist. Students must be prepared for the possibility of working in areas totally unrelated to their academic fields, and they should know that formal academic training for these coming jobs will not always exist” (137). Given that the current nature of workplace writing is one of rapid change and development and that students and their jobs will be co-evolving, Tebeaux argues that the best advantage teachers can give their students is the ability to learn and adapt to new and changing contexts. If she is correct, then Henry’s position is precisely the kind of approach that fosters invention out of these changing contexts. Rather than teaching students general principles for professional writing, Henry habituates students to inventing from their complex institutional situatedness. In placing students in specific contexts via particular techniques, Henry is drawing on the power internal to situatedness. The subject, then, is not one that intervenes in, as much as coinvents with, the situation.

Because Heidegger showed up prominently in the special *TCQ* issue on *technê*, I have used him here as a touchstone to move toward the concept of post-*technê*. Even though someone such as Henry does not explicitly invoke Heidegger, what Heidegger does is provide a way of re-seeing what Henry is up to. It puts Henry in a new constellation so that certain aspects of his pedagogy are revealed. Just because a practice is not explicitly informed by theory or tied either to Heidegger, ecology, complexity, or ambience does not mean these ideas are not at play; they may be implicitly enacted. The recognition that theories don’t have to be consciously applied to be a part of pedagogical technique can help teachers understand their practices in a new way and make us think differently about new practices. The inference to be drawn from this essay, then, is not that teachers copy Henry’s teaching technique. Henry’s pedagogy is not transferable to any technical or professional writing and teaching context. He created a technique specifically for his institution, student

¹⁶Such a pedagogy renders the practice/praxis binary less relevant. For Carolyn Miller, practice looks to economic realms for needed rhetorical models, and praxis looks to the academy to produce its own rhetorical strategies (“What’s Practical?”). Henry’s pedagogy tries to undo the practice/praxis binary by linking elements of academic theory to shards of corporate practice in the context of an ecological conception of the student’s particular cross-institutional situation. As Katherine Staples notes in “Technical Communication from 1950–1998: Where Are We Now?” technical communication, following composition’s disciplinary trajectory, is at this crossroads. “The virulence of current arguments leveled against theory and curriculum by practitioners and against industry practice and ethics by theoreticians smacks strongly of the virulent praxis/*technê* and academic/industry polarities of Miller’s ‘What’s Practical about Technical Writing?’ . . . As both Miller and [John] Harris point out, the schism between academic theory and workplace practice cannot be resolved without thoughtful and open dialogue” (161).

body, and local economy. George Mason University is in a metropolitan area where many of the middle- and working-class students already work in technical, professional, or business writing situations. Such a situational tie means that his technique can not be automatically portable. Without significant revision of technique, teachers could not enact his pedagogy in a rural area where most of the students do not go to school without also working. The inference to be drawn from this essay is simply that teachers take a new perspective on *technê*. In their Afterword to the *TCQ* issue, Robert Johnson and Frances Ranney are interested in beginning the process of “remaking [the notion of *technê*] for the professions of technical communication” (237). I haven’t claimed to know in detail what *technê* is in ancient Greek or even in contemporary rhetorical theory. I am building a constellation among technique, the technical, technology, and *technê* in the hope of revealing one way of viewing *technê* that may be a potentially profitable remake for thinking about pedagogy. In this article, I have tried to develop and maintain these distinctions:

- Technique—a specific strategy, heuristic, or method that enacts both conscious and unconscious elements
- Technical—an act or idea that is both ordered and complex
- Technology—a machine or skill that reveals and conceals through relations or constellations
- *Technê*—the ancient combination of art and technology in productive knowledge
- Post-*technê*—the combination of technique, the technical, technology, and *technê* that is grounded in posthumanism

This constellation amounts to continual, situated invention—that is, remaking techniques for every new situation. Teachers of rhetoric and writing have to invent in their own (institutional) situations by embodying them. Henry does not start with a general heuristic but with placing student bodies in specific institutional contexts. If something is to be derived from my argument, it may be taking a procedure like Atwill’s or Haynes’s, or maybe even a theory like genre theory or activity theory, and imagining what it would reveal when put in a specific constellation with a student body in an institutional context and start remaking pedagogies specifically from/for those occasions, those embodiments.

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WORKS CITED

- Atwill, Janet. *Rhetoric Reclaimed: Aristotle and the Liberal Arts Tradition*. Ithaca, NY: Cornell UP, 1998.
- Barilli, Renato. *Rhetoric*. Minneapolis, MN: U of Minnesota P, 1989.
- Bawarshi, Anis. *Genre and the Invention of the Writer: Reconsidering the Place of Invention in Composition*. Logan: Utah State UP, 2003.
- Bolter, Jay David. *Writing Space: Computers, Hypertext, and the Remediation of Print*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates, Inc, 2001.
- Bridgeford, Tracy, and Michael Moore. "Guest Editor's Column." *TCQ* 11.2 (2002): 125–28.
- Brooke, Collin. "Forgetting to Be (Post)Human: Media and Memory in a Kairotic Age." *JAC* 20.4 (2000): 775–95.
- Davis, Diane. *Breaking Up [at] Totality: A Rhetoric of Laughter*. Carbondale, IL: Southern Illinois UP, 1999.
- Dubinsky, James. "More Than a Knack: *Technê* and Teaching Technical Communication." *TCQ* 11.2 (2002): 129–46.
- Elden, Stuart. *Mapping the Present: Heidegger, Foucault, and the Project of a Spatial History*. New York: Continuum, 2001.
- Gordon, Jay. "*Technê* and Technical Communication: Toward a Dialogue." *TCQ* 11.2 (2002): 147–64.
- Hansen, Mark. *Embodying Technêsis: Technology beyond Writing*. Ann Arbor, MI: U Michigan P, 2000.
- Harmon, Graham. *Tool-Being: Heidegger and the Metaphysics of Objects*. Chicago, IL: Open Court, 2002.
- Hawk, Byron, and David Rieder. "Toward a Post(human) *Technê*." (Review) *TCQ* 11.2 (2002): 234–36.
- Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*. Chicago, IL: U of Chicago P, 1999.
- Haynes, Cynthia. "Writing Offshore: The Disappearing Coastline of Composition Theory." CCCC Annual Convention. Chicago, 22 Mar. 2002.
- Henry, Jim. *Writing Workplace Cultures: An Archaeology of Professional Writing*. Carbondale, IL: Southern Illinois UP, 2000.
- Heidegger, Martin. *Aristotle's Metaphysics: On the Essence of Actuality and Force*. Indianapolis, IN: Indiana UP, 1995.
- . *Being and Time*. Trans. John Macquarrie and Edward Robinson. New York: Harper Collins, 1962.
- . *Nietzsche* Vol. 3–4. Trans. Joan Stambaugh, David Farrel Krell, and Frank A. Capuzzi. Ed. David Farrel Krell. New York: Harper Collins, 1991.
- . *Poetry, Language, Thought*. New York: Harper and Rowe, 1971.
- . "The Question Concerning Technology." *The Question Concerning Technology and Other Essays*. Trans. William Lovitt. New York: Harper Torchbooks, 1977. 3–35.
- Ishii, Hiroshi et al. "ambientROOM: Integrating Ambient Media with Architectural Space." *Conference Summary of CHI*. Los Angeles: Association for Computing Machinery (1998): 1–2.
- Johnson, Robert, and Frances Ranney. "Recovering *Technê*." Afterword. *TCQ* 11.2 (2002): 237–39.

- Kroker, Arthur. "Hyper-Heidegger." *CTheory* 25.3 (2002). 9 Mar. 2004 <http://www.ctheory.net/text_file.asp?pick=348>.
- McComiskey, Bruce. *Gorgias and the New Sophistic Rhetoric*. Carbondale, IL: Southern Illinois UP, 2002.
- Miller, Carolyn R. "What's Practical about Technical Writing?" *Technical Writing: Theory and Practice*. Ed. Bertie E. Fearing and W. Keats Sparrow. New York: MLA, 1989. 14–24.
- Moeller, Ryan, and Ken McAllister. "Playing with *Technê*: A Propaedeutic for Technical Communication." *TCQ* 11.2 (2002): 185–206.
- Muckelbauer, John, and Debra Hawhee. "Posthuman Rhetorics: 'It's the Future Pikul.'" *JAC* 20.4 (2000): 764–74.
- Petraglia, Joseph. "Shaping Sophisticates: Implications of the Rhetorical Turn." *Inventing a Discipline: Rhetoric Scholarship in Honor of Richard E. Young*. Ed. Maureen Daly Goggin. Urbana, IL: National Council of Teachers of English, 2000. 80–104.
- Phelps, Louise Wetherbee. "Institutional Invention: (How) Is It Possible?" *Perspectives on Rhetorical Invention*. Ed. Janet Atwill and Janice Lauer. Knoxville, TN: U of Tennessee P, 2002. 64–95.
- Ranney, Frances. "What's *Technê* Got to Do With It?" *TCQ* 11.2 (2002): 209–13.
- Rickert, Thomas. "Engaging Modernisms, Emerging Posthumanisms, and the Rhetorics of Doing." *JAC* 20.3 (2000): 672–84.
- . "In the House of Doing: Ambience, Rhetoric, *Kairos*." *JAC* (forthcoming).
- Russell, David, and Charles Bazerman, eds. *Writing Selves/Writing Societies: Research from Activity Perspectives. Perspectives on Writing*. 2002. The WAC Clearinghouse and Mind, Culture, and Activity. 7 April 2004 <http://wac.colostate.edu/books/selves_societies/>.
- Rutsky, R. L. *High Technê: Art and Technology from the Machine Aesthetic to the Posthuman*. Minneapolis, MN: U of Minnesota P, 1999.
- Salinas, Carlos. "Technical Rhetoricians and the Art of Configuring Images." *TCQ* 11.2 (2002): 165–84.
- Staples, Katherine. "Technical Communication from 1950–1998: Where Are We Now?" *TCQ* 8 (1999): 153–65.
- Syverson, Margaret. *The Wealth of Reality: An Ecology of Composition*. Carbondale, IL: Southern Illinois UP, 1999.
- Taylor, Charles. "Heidegger, Language, and Ecology." *Philosophical Arguments*. Cambridge, MA: Harvard UP, 1995. 100–26.
- Taylor, Mark C. *The Moment of Complexity: Emerging Network Culture*. Chicago, IL: Chicago UP, 2001.
- Tebeaux, Elizabeth. "The High-Tech Workplace: Implications for Technical Communication Instruction." *Technical Writing: Theory and Practice*. Ed. Bertie E. Fearing and W. Keats Sparrow. New York: MLA, 1989. 136–44.
- Van Pelt, Tamise. "The Question Concerning Theory: Humanism, Subjectivity, and Computing." *Computers and the Humanities* 36.3 (August 2002): 307–18.
- Vitanza, Victor. "Three Countertheses: Or, a Critical In(ter)vention into Composition Theories and Pedagogies." *Contending with Words: Composition and Rhetoric in a Postmodern Age*. New York, NY: MLA, 1991. 137–67.
- Wisneski, Craig et al. "Ambient Displays: Turning Architectural Space into an Interface between People and Digital Information." *Proceedings of the First International Workshop on Cooperative Buildings*. Darmstadt, Germany. 25–26 Feb. 1998. New York: Springer Press, 1998: 1–11.
- Worsham, Lynn. "The Question Concerning Invention: Hermeneutics and the Genesis of Writing." *Pre/Text* 8.3–4 (1987): 197–244.
- Young, Richard. "Arts, Crafts, Gifts and Knacks: Some Disharmonies in the New Rhetoric." *Reinventing the Rhetorical Tradition*. Ed. Aviva Freedman and Ian Pringle. Conway, AK: Canadian Council of Teachers of English and L&S Books, 1980. 53–60.

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