Digital Rhetoric: Theory, Method, Practice

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// excerpt, chapter 2, Digital Rhetoric: Theory //

Digital Ecologies

In one of his last works, Walter Ong suggested that

> The age in which humans existence is now framed, the age in which human life and technology so massively and intimately interact, can well be styled not only the information age and the age of interpretation, but, perhaps, even more inclusively, the ecological age, in principle an age of total interconnectedness, where everything on the earth, and even the universe, is interconnected with everything else, not only in itself but, ideally, in human understanding and activity. (qtd. in Walter, 2005, n.p.)

A scientific term originally applied to research on interactions in specific natural environments[2], "ecology" as a metaphor for complex, interconnected relationships has a rich history of use in writing studies (Cooper, 1986; Syverson, 1999; Nardi & O'Day, 1999; Spinuzzi & Zachry, 2000; Spinuzzi, 2003; Blythe, 2007). The basic scientific definition of ecology is "the study of the relationships of organisms to their environment and to one another. The key word is 'relationships.' Ecology is a study of interactions" (Brewer, 1988, 1); another key aspect of the science of ecology is the study of the ecosystem: ecology can be applied as the "ecology of the individual organism [or] the ecology of groups of individuals or populations," when taking the latter approach, it is important to acknowledge that "populations live together in communities—the community along with its physical setting or habitat is a single, interacting unit, the ecosystem" (11). Thus, the key elements of ecological study—relationships, interaction, complexity, and community—easily map onto qualitative studies of writing and rhetoric in both epistemological and ontological terms.

Ecology is also a useful framework for a theory of rhetorical circulation because it provides a systems-based view of both the environments and relationships that take place through digital circulation mechanisms. Systems are characterized by their compositions, environments, and structures (Bunge, 1979); in *Applied Systems Ecology*, Friedrich Recknagel (1989) explicates these systemic elements:

> The *composition* denotes the set of system components,
> the *environment* denotes the set of environment components which influence the system components. The definition of the composition and environment in turn implies the marking of the system boundary. The *structure* denotes the set of relations between composition and environment as well as within composition. (13–14)

Networks, particularly the digital networks in which digital texts circulate, are also systems, and in this way they can be similarly seen as elements in a digitally networked ecology of overlapping (and networked) ecosystems. Zan, Zambon, and Pettigrew (1993) argue that a "network is a system and not only a nexus of relations. Due to its systemic nature, a network is a working entity, which continuously reproduces its relationships and changes forms and contents over time. Therefore, networks are evolutionary systems, living organizations" (130); in other words, networks are ecological entities. The science of ecology uses this sense of system architecture to articulate its key unit of analysis: the ecosystem.

Ecologies and Ecosystems

Ecology as a field of study looks at both ecologies and ecosystems. Ecologies are internetworked and interacting systems made up of discrete ecosystems. An ecosystem can be "any size so long as organisms, physical environment, and interactions can exist within it" (Pickett & Cadenasso, 2002, 2), thus replicating the systems approach outlined above. As I use the terms, "ecology" is the super-structure and the theoretical lens; "ecosystem" is the specific system that a digital work originally belongs to when it is first distributed or published, but it is also the interconnected composition and environment that can be mapped and articulated through its circulation (and, indeed, that is one aim of circulation analysis).

Ecosystems represent specific, bounded locales where circulation takes place; and although circulation occurs across and through multiple ecosystems, the effects are best observed within particular localized systems; thus, ecologies represent the scales at which research on circulation may be most profitably undertaken.

Energy Flow and Material Cycling

Two important properties of ecosystems are that they have *energy flows* and they *cycle materials* (Kling, 2006); these two ecological properties can also be articulated as economic properties when applied to digital environments such as the Internet (indeed, Stephen Adler [1998] describes the Internet itself as an "information ecosystem"). In material ecosystems, such as ponds, forests, or oceans, the cycle of materials is enacted through the uptake, use, respiration, reformation, and reuse of the basic ecological components (e.g., plants, animals, water, carbon, nitrogen); the energy flows provide the engine for these material cycles though input and consumption (of solar/heat energy). These same essential processes can also be seen at work in digital production. The circulation of materials occurs in the use, remix, and appropriation of digital texts, and the energy that drives this circulation comes from the rhetorical activity of digital bricoleurs, often operating within particular social networks (in ecological terms, these are communities that inhabit specific ecosystems). In other words, the rhetorical activity of writers and the material labor of production is analogous to the input of energy per se into a natural system; once that energy (and the digital object that results from the deployment of that energy) is added to any given digital ecosystem, the interaction of environment (network) and other inhabitants (other digital texts) in that ecosystem generates relational links and instances of material cycling (also known as remix in terms of digital practice).

For example, YouTube (http://www.youtube.com), a digital video file-sharing service, allows users to post and circulate digital videos they have found or created. But a common practice in the YouTube community is to appropriate and reuse the materials that have been posted there. In some instances, the remix is not complex: simply adding subtitles to videos (as translations, or to add information, or providing a parody of the original content). Other videos represent more complex interactions: players of massively multiplayer online role-playing games (MMORPGs) such as *World of Warcraft* and *Guild Wars* have created a number of music videos that feature choreographed in-game activity set to songs such as the Village People's

"YMCA" or MC Hammer's "U Can't Touch This." For a particularly involved example, see YouTube user GraveD1gger's "Guild Wars vs. World of Warcraft" (http://www.youtube.com/watch?v=YcWXL8jpFGs), which pits in-game choreography from two different MMORPGs as a dance contest set to Hammer's "U Can't Touch This" (which in turn samples Rick James's 1981 hit "Super Freak").

Cross-community *and* cross-media appropriation and circulation is fairly common in digital environments: in January of 2007, Clemens Kogler, Karo Szmit, and Andre Tschinder posted "Le Grand Content" to YouTube (http://www.youtube.com/watch?v=lWWKBY7gx_0), describing it as an examination of

> the omnipresent PowerPoint-culture in search for its philosophical potential. Intersections and diagrams are assembled to form a grand 'association-chain-massacre'. Which challenges itself to answer all questions of the universe and some more. Of course, it totally fails this assignment, but in its failure it still manages to produce some magical nuance and shades between the great topics death, cable tv, emotions and hamsters. (n.p.)

The graphs and Venn diagrams that provide the content for "Le Grand Content" were originally published in Jessica Hagy's blog *Indexed* (http://indexed.blogspot.com), which features scans of diagrams that she draws on index cards.

But material cycling is certainly not limited to video production. Consider the case of Fark.com, whose users collect and aggregate headlines from newspapers and other online news sources, annotating them with amusing headlines; unlike the other examples, however, there is also an editorial mechanism that allows some headlines to be promoted to the main site while rejecting others—in ecological terms, this process may be understood as a "limiting factor," that is, an environmental factor that influences the maximum population of plants or animals in a given ecosystem.

Ecology as Metaphor

In describing circulatory activity as taking place within an ecological context, I draw on two approaches that also use the ecological metaphor: Nardi and O'Day's (1999) "information ecologies" and Spinuzzi and Zachary's (2000) "genre ecologies." Each of these formations plays a role in the structure of circulation ecologies, as both "information" and "genre" influence and are influenced by circulation, but I would

suggest that information is too broad and genre is too narrow to effectively describe the interaction, movement, and exchange that occurs with the digital circulation of rhetorical objects. Information implies an object but does not incorporate use as an intrinsic component of that object's character. Genres shift and change not only over time but through the processes of circulation. What is useful, however, is the articulation of how both information and genres function within complex networks of interaction: how they interact within specific ecosystems.

Nardi and O'Day (1999) define an information ecology as "a system of people, practices, values, and technologies in a particular local environment. In information ecologies, the spotlight is not on technology, but on human activities that are served by technology" (49). This notion of information ecologies does two things particularly well: it shifts focus from technology as tool to technology-in-use (that is, activity can be seen as a synergistic relationship between digital media/technologies and human actors) and it focuses the lens of inquiry on a finite context (which is useful for the development of research methods). And I agree with Nardi and O'Day (1999) when they posit that "the ecology metaphor provides a distinctive, powerful set of organizing properties around which to have conversations. The ecological metaphor suggests several key properties of many environments in which technology is used. An information ecology is a complex system of parts and relationships" (50). They go on to provide an extended metaphor, taking into account habitations, niches, speciation, and other biological components of an ecological framework; but for my purposes, the two most important elements of the ecological metaphor are that "an information ecology is marked by strong interrelationships and dependencies among its different parts" (51) and that "locality is a particularly important attribute of information ecologies" (55).

Strictly speaking, what Nardi and O'Day (and later Spinuzzi and Zachary) term "ecologies" are actually ecosystems: ecologies are the larger contexts in which these individual ecosystems reside and interact. And while Nardi and O'Day have established perhaps the most well-known use of an ecological lens for rhetorical practice, their insistence on locating "ecologies" in specific material locations (such as libraries, schools, and hospitals) actually places artificial boundaries on an ecological perspective, thus robbing it of a fully realized vision of interconnectedness and interrelationships that occur through both local and global environments. The other

drawback to Nardi and O'Day's approach to applying an ecological metaphor is that they disassociate the ecological view from the systems-level view (despite the fact that ecology is essentially a study of biological systems); if "the technological system is the water we swim in, and it has become life-sustaining and almost invisible to us" (43), then occupying a position within a particular ecosystem (or, more accurately, multiple ecosystems) and larger ecological structures is no less an invisible framework—until it is articulated and applied.

Spinuzzi and Zachary (2000) begin with the information ecology metaphor and extend it to their own work with what they call "genre ecologies." As they define it, a "genre ecology includes an interrelated group of genres (artifact types and the interpretive habits that have developed around them) used to jointly mediate the activities that allow people to accomplish complex objectives. In genre ecologies, multiple genres and constituent subtasks co-exist in a lively interplay as people grapple with information technologies" (172), and they argue that genres "are not static forms; they are dynamic, organic, and messy. To account for variations across instantiations of a given genre, a more robust, ecological perspective is required, one that accounts for the dynamism and interconnectedness of genres" (173). It is in this same vein that I therefore argue for an ecological perspective with respect to circulation in order to account for the dynamism and interconnectedness of rhetorical processes and the economics of production and circulation of digital work.

Whereas Nardi and O'Day's notion of information ecologies helps to frame the overall interaction between people, texts, and digital networks, Spinuzzi and Zachary's work on genre ecologies provides a description of how genres interact within specific ecosystems.

Circulation takes place both within and across specific, situated ecosystems; as I have noted, these ecosystems can be described in terms of the specific interactions between people, texts, and technologies. Thus, any method for examining or researching circulation must take into account not only the actors, networks, and interactions but also the specific articulation of media and technology within those networks. Ecosystems, then, have rhetorical, technical, and social dimensions that influence the possible routes of (and interactions made possible by) circulation; these ecosystems can be framed as networks within specific and situated institutions (such as a

department within a university or workplace), but they can also be framed in terms of digital spaces that are bounded by genre and activity. For example, eBay represents a particular ecosystem that engages a specific form of trade that is framed by eBay's interface, user communities, and system of ratings. Similarly, communities of users form networks within Flickr's social networking and image-sharing system that do not correspond to networks outside of the Flickr ecosystem (although there are connections across and through other networked ecologies). Some digital systems are also tied to specific user networks, such as posting links to del.icio.us that serve a particular course at a specific institution; in these cases, there is a connection between local (physical) communities and public digital networks; the intersection of local use and public digital spaces represents an important area of inquiry for the study of circulation.

Ecological systems as I see them can also be articulated in terms of scale (that is, the methodological lens can be focused narrowly or widely): digital ecologies can be identified as micro-ecologies (as in the work/portfolio of a single individual), midrange ecologies (which contextualize the work of collaborators, departments, research groups), or macro-ecologies (institutions, fields, disciplines, nations).

Economies of Circulation

If "ecologies" represent the contexts of circulation, "economies" represent the mechanisms that motivate circulation, primarily through the process of production, distribution, and exchange (using Marx's terminology). The key to how and where a given text will circulate is based upon the value of that text, which can be assessed in terms of either use-value or exchange-value. Because Marx's work is concerned with material production, his framework includes consumption as an integral (and cyclical) component of the production process (and also required for the establishment of value). Consumption, however, becomes useful only at a metaphorical level when the object of the exchange is digital: exact reproductions can be made that do not consume the original products. Consumption can be described in terms of external resources (such as the living expenses of the scholar(s) who develop digital texts), but it no longer plays a direct role in the economies of circulation (although one might substitute "use" for consumption in order to fulfill all of the requirements of production in Marx's theory). This is not to say that digital objects are immaterial—they have material value by virtue of use and exchange. But it is useful here to depart

from a strictly Marxist interpretation of capital and consider the role of what Bourdieu calls "cultural" and "social" capital in the economies of circulation.

It is important to note at the outset that I am *not* using Marx's notion of circulation here, because his use of circulation is both limited in scope and is divorced from production (which is the opposite of my contention that, rhetorically speaking, circulation plays an important role in all of the classical rhetoric processes, from invention to delivery). In his "Introduction to a Contribution to the Critique of Political Economy," Marx states both that "circulation is merely a particular phase of exchange or of exchange regarded in its totality" and that "exchange is simply an intermediate phase between production and distribution" (*Capital*, II: 203). This view of circulation is particularly limited as well since Marx asserts that "circulation time and production time are mutually exclusive. During its circulation time, capital does not function as productive capital, and therefore produces neither commodities nor surplus-value" (*Capital*, II: 203). Because Marx would say that circulation adds no use-value, and therefore no surplus value, the limitation that I see here is the insistence on separating the processes of production and circulation (the "time" part of the equation).

Marx's view of capital itself is closer to my use of circulation, as he describes capital as "a movement, a circulatory process though different stages, which itself in turn includes three different forms of the circulatory process. Hence it can only be grasped as a movement, and not as a static thing" (*Capital*, II: 185). Patrick Murray (1998) argues that capital is indeed "not a thing, and not a historical constant, but a bizarre and astoundingly powerful (asocial) social form of wealth turned 'automatic subject'" (37). Murray's odd turn of phrase in declaring capital an "(asocial) social form of wealth" seems particularly apropos when applied to circulation—it invokes both the human activity that motivates circulation as well as the independent work of both human and nonhuman actors that facilitates the paths and mechanisms of circulation. Murray goes on to say that "the circulation of capital involves not simply a flow of materials but metamorphoses, *a flow of forms*" (37, emphasis in original); substitute "digital texts" for "capital" and this neatly describes my description of the process of circulation in digital communication networks.

Marx does recognize that circulation "is just as necessary for commodity production as is production itself, and thus agents of circulation are just as necessary as agents of production" (*Capital*, II: 205), but again, his theory is grounded in material production, thus requiring a kind of translation into a form that might be useful for understanding economies of circulation. Marx notes that transportation adds value (and surplus value) because it affects the use-value of commodities: "the use-value of things is realized only in their consumption, and their consumption may make a change of location necessary, and thus also the additional production process of the transport industry" (*Capital* II: 266–67). One might reframe this for digital networks: circulation (transportation) adds value because digital texts can be appropriated (although not consumed); this kind of use increases use-value, although the real change wrought by digital circulation is always better expressed as exchange-value (which is possible without having to include consumption as a necessary component of production or necessary outcome of distribution). And this reframing shows where I must most sharply disagree with a Marxist interpretation of circulation. As Murray explains, "no value and, *a fortiori*, no surplus value is created in the restricted sphere of circulation for a simple reason: in this sphere no use-value is (preserved or) added to the commodity, and if no *use-value* is (preserved or) added, no *value* is added. For, while a use-value need not be a value, value depends on use-value" (46, emphasis in original). I would contend that circulation is the principle mechanism not only for enabling exchange-value but also for adding use-value to the rhetorical object via its reproduction, appropriation, and use within a particular circulation ecology or through interactions across multiple circulation ecologies.

Circulation makes the rhetorical object available for appropriation, thus increasing the use value. Consider the case of the MA thesis that is bound and sent to a university library—the thesis is in circulation, but its form severely limits the scope of said circulation, as its ecology of use is bound to the physical space it can occupy. That same thesis, made available on the web, is much more likely to be read, quoted, and cited—that is, to garner increased use-value. The rhetorical object itself is in essence a "flow of forms."

The production of digital objects endows them with use-value, but the motivation for production is grounded in the subjective exchange-value that is garnered through the distribution and publication (and ultimately circulation) of the texts. Because digital circulation does not function in the same way as material production, it is better to

approach the question of exchange-value not through Marxist theory but via Bourdieu's theory of cultural capital. Particularly in terms of scholarly work and knowledge management ecologies, digital objects are not typically traded for material or monetary gain; instead, the exchange-value of the work comes from the accrual of cultural or social capital.

Bourdieu's (1977) project began as an attempt "to extend economic calculation to all the goods, material and symbolic, without distinction, that present themselves as rare and worthy of being sought after in a particular formation—which may be 'fair words' or smiles, handshakes or shrugs, compliments or attention, challenges or insults, honour or honours, powers or pleasures, gossip or scientific information, distinction or distinctions, etc." (178); my own interest in developing an economics of circulation would fall in with the latter categories of symbolic goods, as I am particularly interested in the kinds of formation (genres) that occur in academic settings. In a sense, the Marxist perspective can be used to consider the circulation of digital texts as capital that requires labor, production, and distribution, while the Bourdieu-ian perspective is concerned less with the object of circulation and more with the composers and appropriators of those texts.

Economies of circulation, then, must account for both the use-value and exchange-value acquired by rhetorical objects as they circulate through digital networks as well as the social capital these works are exchanged for by their authors and appropriators. As with circulation ecologies, these processes are complex and interdependent, relying on the relationships between human and nonhuman actors who are connected via digital networks.