

The Ecology of Association

**President's Address Delivered at the Inaugural Media Ecology Association Convention
Fordham University, New York, New York
June 16–17, 2000**

Lance Strate ¹

TODAY, FOR THE FIRST TIME, I think we can say, without doubt or hesitation, that the Media Ecology Association is real. But what does getting real mean in this context, and what does it imply about who we are? Buckminster Fuller described himself with the following words: "I live on Earth, at present, and I don't know what I am. I know that I am not a category. I am not a thing—a noun. I seem to be a verb" (Fuller, Agel, & Fiore, 1970, p. 1). Fuller's insight applies to all of us, individually and collectively. The Media Ecology Association is a verb, and it is now going through a change of conjugation. The significance of tense and syntax was discussed by Benjamin Lee Whorf (1956), who informed us that the Amerindian Hopi have only two verb forms in place of our past, present, and future. One is the manifest, that which exists, a category that encompasses both the past and the present. The other is the unmanifest, that which does not exist yet, which may or may not come to be. Following the Hopi grammar of time, we can now conjugate the Media Ecology Association in the manifest tense—we exist!

This is no simple linguistic change, however. We are participating in another basic form of symbolic communication, that of ritual. Ritual provides a vehicle to move us from the unmanifest to the manifest. The performance of rites and ceremonies allows us to realize and reify our social constructions, materialize our metaphors, and transform the virtual into the actual. By participating in a Media Ecology Association convention, we are taking part in a rite of unity, a ritual of phatic communion as Bob Dobbs (1992) would have it. We are confirming our collective identity as an association. And by participating in the first MEA convention, we are taking part in a rite of passage. The turning point will occur tomorrow morning, during our business meeting, when the membership will (hopefully) ratify our constitution [the MEA Constitution was approved]. In doing so, the Media Ecology Association will be fully and officially constituted. As Kenneth Burke (1969) argues, a constitution, as the embodiment of ideas, forms a symbolic ecology within which we may act, and interact.

What, after all, is an association if not an ecology? It is a human ecology, to use the phrase coined by Patrick Geddes (1904, 1915). And all human ecologies are ecologies of mind, as Gregory Bateson (1972) put it; ecologies of sense, as Donald Theall (1995, 1997) suggests; and information ecologies, as Joshua Meyrowitz (1985) has shown. All human ecologies are communication ecologies, as David Altheide (1995), Barrington Nevitt (1982), and Niklas Luhmann (1989) have suggested. Communication is the necessary prerequisite for community, which is why all human communities are, at least in part, what Kenneth Gergen (1991) calls symbolic communities, what Gary Gumpert (1987) calls media communities, what Howard Rheingold (1993) calls

¹ Lance Strate is Associate Professor in the Department of Communication and Media Studies, Fordham University, 434A Faculty Memorial Hall, 441 E. Fordham Road, Bronx, NY 10458 (strate@fordham.edu).

virtual communities, and what Benedict Anderson (1983) calls imagined communities.

Through communication, communities are bound together in space. We have been linked together as an association by dialogue and publications, by mailings and telephone calls, and especially by the Internet: our association owes a tremendous debt to e-mail, the listserve, and the Web. And we are now utilizing the traditional medium of the group meeting and the public address to learn about each other, exchange ideas and information, discuss matters of concern, make decisions, and maybe even amuse ourselves not quite to death. All of this is sufficient reason for a conference, during which we can participate and confer as individuals. But this is more than a conference, this is a convention, and we are here to convene as a group, to constitute our association as an entity in its own right.

But, as Harold Innis (1951) established, a community does not live by space alone; it is also a product of communication over time. That is why James Carey (1989) emphasizes the ritual function of communication, for ritual is the most basic technology through which we preserve knowledge and maintain social cohesion. In the words of Susanne Langer (1957),

Ritual is the most primitive reflection of serious thought, a slow deposit, as it were, of people's imaginative insight into life. That it why it is intrinsically solemn, even though some rites of rejoicing may degenerate into mere excitement, debauchery, and license. (pp. 157–158)

Maybe later. But for now, I wish to emphasize that the ceremonial element of this meeting is serious business. It is fashionable to denigrate or ignore such formal and formulaic elements of culture in favor of postmodern irony, but media ecologists know better. We know that cultures are made up of rules and repetitions, and most important of all, remembrances. What Carey (1989) calls ritual, Tony Schwartz (1974) calls resonance, the point being that our ecosystem is also an echo-system, and that what we do here today and tomorrow can reverberate into the future. If we are successful, we will have created the archetype of MEA conventions to come. If we are successful, future conventions, while surpassing this one in myriad ways, will always be in one sense a reenactment of our proceedings. If we are successful, we will have solidified our Association's identity and arranged for its perpetuation.

YOU MAY HAVE NOTICED that I am now conjugating the Media Ecology Association along the more familiar lines of present and future tense, which in turn suggests that we consider the Association in the past tense. How did we get to this point? In the Spring of 1997 we held the first of several roundtable discussions on media ecology at an Eastern Communication Association convention in Baltimore, which led to a serious discussion about forming an association; as a first step, Stephanie Gibson set up the famous media ecology listserve.

In the beginning, the listserve was dominated by NYU alumni and had a decidedly chatty quality to it. The idea of setting up a formal organization was the first topic of discussion, and there was considerable interest in doing so. I should note, however, that Stephanie Gibson (1997) balked at the idea of a constitution and bylaws, declaring that media ecology was originally intended to be an outlaw discipline. And Christine Nystrom (1997a, May 7) suggested that we make it a cult that she could lead as "Earth Mother of Media Ecology." She went on to write,

Why should MEN always be the cult leaders? But it's fine with me if you guyz want to have a cannon. It's a useful thing for a cult to have a cannon. Keeps everybody in line, gives the fellas something to do. And then when the right time comes, we can use it to shoot ourselves into outer space, where ME will live forever and ever, perfectly defined, truly named, methodologically purified! At one with the cosmos! Fully evolved to its final, perfected state!

Well, here we are, perhaps not fully evolved but further evolved. And the tension between structure and creativity, canon and cult remains with us today. But who better to mediate these oppositions than us media ecologists? Speaking of cult, the list experienced a strange visitation about a month into its existence. The e-mail message read,

This is the Ghost of Marshall McLuhan speaking to you. I don't have to tell you from what world I come. ...I will say what I have to say only once. You will not hear from me again unless you persist in your foolishness.

Does the word "books" mean anything to you? Do you have so much time on your hands that you can afford to waste yourselves on this infernal machine? Have you already accumulated so much wisdom that you no longer need to read the best that has been thought and written? Is this the way you honor the work and life of my great friend and disciple, Neil Postman? Do any of you actually know how to spell?

I have now read all of your idiotic messages. Hear, now, The Law: Every medium taken to its furthest extent flips to its opposite. Thus the written word, which is the source of all the intellect we have, when used in this unholy fashion becomes a medium for the expression of all our stupidities. This, you have demonstrated amply. Enough, I say.

I must now return from whence I came. Remember what happened to the Hebrews when they did not follow the Law.

Ghost. (Nystrom, 1997b, May 13)

Clearly, *Wired* magazine does not have a monopoly on channeling McLuhan. While the ghost never reappeared, the level of discourse that emerged on the list over its first year was extraordinary. The effort to form an organization was put on the backburner, however, while the list grew larger and more cosmopolitan. An important turning point was *The Legacy of McLuhan: A Symposium*, held at Fordham University in March of 1998, which featured over forty scholars, artists, and media professionals. The McLuhan Symposium was quite a success, and it reenergized discussions on forming an association. But it was not until September 4th of 1998 that Sue Barnes, Thom Gencarelli, Paul Levinson, Casey Lum, and I would finally meet at Fordham's

Rose Hill Campus in the Bronx to call the Media Ecology Association into existence, beginning the process that we are consummating at this convention.

As is quite apparent, the Association's development has been slow, and we have been plagued by organizational and communication problems. I therefore wish to say, on behalf of the MEA, MEA culpa. Through the efforts of Executive Secretary Sue Barnes, our mailings are being regularized. The first issue of our newsletter, *In Medias Res*, was printed last winter, and the next one will be out this summer. The development of our website, www.media-ecology.org, under the leadership of Mary Ann Allison, has been spurred on by this convention. The media ecology list became a victim of its own success in 1999, threatening to collapse under the weight or rather volume of its own posts. But it has since stabilized and formalized itself, and is now the official listserv of the MEA.

This September will mark the third time that we have been one of the cosponsors of the New York State Communication Association's annual conference. We also cosponsored four sessions at this April's meeting of the Eastern Communication Association, which was organized by Susan Drucker. And thanks to the efforts of Casey Lum, we are now an affiliate of the National Communication Association and will be running several sessions at its next convention in Seattle this November. Through the efforts of Thom Gencarelli we outlaws have bylaws and a constitution awaiting approval at tomorrow's business meeting, and Janet Sternberg and Mark Lipton will be editing this convention's juried proceedings, which will be published on our website. And thanks to the efforts of Paul Levinson, Janet Sternberg, and so many others, we have this, our first annual convention.

In working to establish the Media Ecology Association, it is clear to me that at any number of points we could have said that the task is too hard, or the time is not right, or that someone else should do the work, and we would not be here today. Of course it is true that the proliferation of technological innovations, modes of communication, and symbolic forms in the twentieth century invited the attention of scholars and critics, allowing for a body of theory and research in media ecology to accumulate. And it is true that television in particular both increased public interest in the media and in media analysts like McLuhan (1964). And it is true that the Internet has allowed intellectuals who share the media ecology perspective to find one another and form ties. The Media Ecology Association is the product of the electronic media environment, but nothing about it was inevitable, including the choice of its name.

THERE ARE MANY ALTERNATIVES that have been or might have been used instead of media ecology, such as cultural studies, or consciousness studies, or some variation on semiotics, technics, and/or cybernetics. But for most of us, it is the medium that is the message, and all the rest is commentary. It is media that capture our attention and imagination, and it is through media that we understand other phenomena. As Aristotle might have said, it is media in all things, including media. In all things we look for the means by which information is transmitted, relationships are formed, content is communicated, meaning is made, and knowledge is preserved. In all things we look for the materials and methods that link things together, or keep them apart, or otherwise go between them.

As much as the emphasis on media is clear, the choice of ecology is not. There are other terms that might be used, such as the broad term of media studies, or as John Culkin preferred, medium

studies; Régis Debray (1996), following the pattern of semiology, uses mediology. And there is media history, or perhaps media futurism; media literacy and media education; media philosophy and maybe even media theology, and so on. But none of them get at the gestalt of media ecology. Some of the greatest ambivalence towards media ecology comes from those most intimately connected to it. For example, my colleague Ed Wachtel (1997, May 6) posted the following during the early days on the listserve:

I loved the M E program, but the name still requires explanation to the uninitiated. Both the NY Times and the Village Voice...have made fun of it. My friends have made fun of it. Even my mother made fun of it. It may be that the name sounds frivolous, or too Sixties, or too soft and fuzzy. Maybe, as the comedian taught us, it is just a funny phrase. ...
Do you want your mothers to think you are not engaged in serious business....or your deans when you ask for funding?

Is it a name only an earth mother could love? Interestingly, it was the non-NYU list members who came to its defense. For example, Paul Soukup, SJ (1997, May 6) wrote, "...the issues of the name do not carry the same baggage for me that they might for some others. "Media ecology" always struck me as an interesting way to describe this take on the world of communication." Along the same lines, a year and a half later James Beniger (1999, March 3) answered a critical post with,

If there can be a "human ecology" for 92 years, I don't myself see anything wrong with a media ecology, which I think is entirely parallel, at least in theory. Where it might eventually lead in practice, who among us can now say?

As for myself, I understood all too well Ed Wachtel's misgivings about the term, but I cast my die in 1994, when Hampton Press accepted my proposal for a book series in media ecology. So far we have been published Henry Perkinson's *No Safety in Numbers* (1995), Ray Gozzi, Jr.'s *The Power of Metaphor in the Age of Electronic Media* (1999), and Tom Farrell's new book, *Walter Ong's Contribution to Cultural Studies* (2000), and there are many more to come. I would suggest, with apologies to Winston Churchill, that media ecology is the worst term we could use, aside from all the rest. But let me offer some reasons why we do use it.

First, it has a meaningful history. It has been used by both Marshall McLuhan and Neil Postman and has had a stable, long-term identity at New York University and other institutions. Media ecology and related formations such as information ecology and communication ecology have worked their way into the scholarly and popular literature as well.

Second, it is unclaimed territory. Media ecology is a house we can call our own, unlike cultural studies, or media studies.

Third, unlike terms that use the word "studies," ecology implies something of a scientific orientation. This is not to say that media ecology is necessarily a science itself, but that it does seek a degree of consistency with established scientific fact.

Fourth, ecology implies systems theory, cybernetics, and the new sciences of chaos and

complexity. This links our approach to the philosophy of holism and to the cutting edge of scientific theory.

Fifth, ecology is the study of environments, and media ecology is the study of media environments. One of the most important ideas in the media ecology literature is that there are distinct media environments, and categories such as the oral, scribal, print, and electronic media environments, within which cultures grow and forms of consciousness evolve.

Sixth, as the study of environments, ecology also *is* the study of media. One of the definitions of medium is a substance that pervades and surrounds, in other words, an environment. In *Counterblast* McLuhan concludes that “to say that any technology or extension of man creates a new environment is a much better way of saying that the medium is the message” (McLuhan & Parker, 1969, p. 31). The medium that extends us also amputates us, according to McLuhan—it is simultaneously a link and a barrier, a shield, or a container, according to Mumford (1961, 1967). And if you would allow me to add to the many plays on McLuhan’s famous aphorism, the medium is the membrane. Whatever extends us also goes between us and our environment, shuts out our old environment, and becomes our new environment.

Seventh, ecology allow us to avoid the trap of determinism. Rather than describe the impact of media in terms of cause-and-effect, ecology suggests more complex relationships in which the environment may function along the lines of natural selection, or more actively favor certain effects over others, or otherwise allow phenomena to emerge. In place of linear causality, we have the kind of nonlinear perspective that is emphasized in the works of Alfred Korzybski (1933), Dorothy Lee (1959), Marshall McLuhan (1964), Ted Carpenter (1973), and James Curtis (1978), and the acoustic rather than visual logic discussed by Eric Havelock (1963, 1986), Walter Ong (1967, 1982), Tony Schwartz (1974), and R. Murray Schafer (1977).

And eighth, ecology also has connotations that imply intervention, praxis, and activism. Ecology is associated with a general concern with preserving and repairing the world, and media ecologists have sought to use their understanding of media to address social problems.

In an unpublished essay sent to me by Walter Ong, dated April 5, 2000, and entitled “Reflections on the Ecological Age,” he poses the question, “Why has ecology become such a preoccupation of intellectual and practical life in the past few decades?” (p. 1). In part, he answers,

...with the information explosion, we have become more and more conscious of the interrelationships of all the existents and structures in the universe around us, and, with our more and more detailed knowledge of cosmic and organic evolution, ultimately of interrelationships as building up to and centering on life, and eventually human life. (p. 2)

He later adds that

one evident reason for today’s preoccupation with ecology is that, with our vast accumulation of knowledge, the present age has a more holistic sense of reality than it was possible for earlier human beings to have, and one that extends beyond the ‘global village’ to the entire universe, in time as well as in space. (p. 2)

So say it loud and say it proud: Ecology, Media Ecology.

SOWE HAVE A NAME, we have an association, we have a convention. For me, this feels as if we have stolen fire from heaven. The reference is to Prometheus, of course, the subject of a play by Æschylus, which was translated with extensive commentary by Eric Havelock back in 1951. The theft of fire on behalf of humanity represents a rite of passage, a transition from savagery to civilization. The gift of fire represents science and technology, but also culture and knowledge. But above all, fire is the primordial medium.

I want to suggest that the MEA is a Promethean society. In one sense, I say this because Prometheus is a trickster archetype, and media ecology has had more than its fair share of tricksters, chief among them Marshall McLuhan. By this I mean a scholarly style that favors humor and wordplay, a pedagogical approach that is challenging and unexpected, and a willingness to question and contest established authority. Prometheus defies Zeus, the embodiment of power, and is in this sense an outlaw. He is an agent of chaos, a Dionysian figure, and as Camille Paglia (1990) explains,

The Dionysian is no picnic. It is the chthonian realities which Apollo evades, the blind grinding of subterranean force, the long slow suck, the murk and ooze. It is the dehumanizing brutality of biology and geology, the Darwinian waste and bloodshed, the squalor and rot we must block from consciousness to retain our Apollonian integrity as persons. (pp. 5–6)

What Paglia implies is that the Dionysian is ecological in its deepest and darkest sense. But Prometheus is the most Apollonian of the Titans, so that while he brings chaos to the perfect order of Olympus, he also gives order to the chaos of primeval humanity. As an ecologist, Prometheus is an agent of balance.

Like Prometheus, media ecology has in the past been bound and constrained by the short-sighted and the small-minded, punished by unimaginative and anti-intellectual forces (and mocked by Ed's mother). But today, at this inaugural convention, we are witness to Prometheus, or if you will permit me, Promedia unbound.

Havelock (1950) translates the name Prometheus as The Forethinker. This suggests an ecological outlook of the sort advocated by Lewis Mumford (1934, 1961, 1967, 1970), Harold Innis (1951, 1972), Jacques Ellul (1964, 1980, 1990), and many other media ecology scholars, one that favors long-term planning over short-term calculation. It also suggests prophecy and the futurism that many media ecologists have been associated with.

Ours is a Promethean society, a tradition of big ideas and great intellects. And now we find ourselves securely elevated on the broad shoulders of intellectual giants such as Lewis Mumford and Harold Innis, Susanne Langer and Eric Havelock, Jacques Ellul and Marshall McLuhan. And the view is breathtaking.

Our work, in building the Media Ecology Association, is just beginning. I invite you all to be a part of it. Be the medium, spread the message.

References

- Altheide, D. L. (1995). *An ecology of communication: Cultural formats of control*. Berlin, Germany and Hawthorne, NY: Aldine de Gruyter.
- Anderson, B. (1983). *Imagined communities: Reflections of the origin and spread of nationalism*. London: Verso Books.
- Bateson, G. (1972). *Steps to an ecology of mind*. New York: Ballantine Books.
- Beniger, J. (1999, March 3). In defense of "media ecology." Message posted to mediaecology electronic mailing list, archived at [gopher://ube.ubalt.edu:70/00gopher_root1:\[MEDIAECOLOGY\]mediaecology.1999-03](mailto:gopher://ube.ubalt.edu:70/00gopher_root1:[MEDIAECOLOGY]mediaecology.1999-03)
- Burke, K. (1969). *A grammar of motives*. Berkeley: University of California Press.
- Carey, J. W. (1989). *Communication as culture: Essays on media and society*. Boston: Unwin Hyman.
- Carpenter, E. (1973). *Oh, what a blow that phantom gave me!* New York: Holt, Rinehart & Winston.
- Curtis, J. M. (1978). *Culture as polyphony: An essay on the nature of paradigms*. Columbia: University of Missouri Press.
- Debray, R. (1996). *Media manifestos : On the technological transmission of cultural forms* (E. Rauth, Trans.). New York: Verso Books.
- Dobbs, B. (1992). *Phatic communion with Bob Dobbs*. Toronto, Ontario, Canada: Perfect Pitch Editions.
- Ellul, J. (1964). *The technological society* (J. Wilkinson, Trans.). New York: Vintage. (Original work published 1954)
- Ellul, J. (1980). *The technological system* (J. Neugroschel, Trans.). New York: Continuum.
- Ellul, J. (1990). *The technological bluff* (G. Bromiley, Trans.). Grand Rapids, MI: Eerdsman's.
- Farrell, T. (2000). *Walter Ong's contribution to cultural studies: The phenomenology of the word and I-Thou communication*. Cresskill, NJ: Hampton Press.
- Fuller, R. B., Agel, J., & Fiore, Q. (1970). *I seem to be a verb*. New York: Bantam.
- Geddes, P. (1904). *City Development: A study of parks, gardens and culture institutes: A report to the Carnegie Dunfermline Trust*. Edinburgh, Scotland: Geddes and Colleagues.
- Geddes, P. (1915). *Cities in evolution: An introduction to the town planning movement and to the study of civics*. London: Williams and Norgate.
- Gergen, K. J. (1991). *The saturated self: Dilemmas of identity in contemporary life*. New York: BasicBooks.
- Gibson, S. (1997, May 5). Intro. Message posted to mediaecology electronic mailing list, archived at [gopher://ube.ubalt.edu:70/00gopher_root1:\[MEDIAECOLOGY\]mediaecology.1997-05](mailto:gopher://ube.ubalt.edu:70/00gopher_root1:[MEDIAECOLOGY]mediaecology.1997-05)
- Gozzi, R. Jr. (1999). *The power of metaphor in the age of electronic media*. Cresskill, NJ: Hampton Press.
- Gumpert, G. (1987). *Talking tombstones and other tales of the media age*. New York: Oxford University Press.
- Havelock, E. A. (1950). *The crucifixion of intellectual man*. Boston: Beacon Press.
- Havelock, E. A. (1963). *Preface to Plato*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Havelock, E. A. (1986). *The muse learns to write: Reflections on orality and literacy from antiquity to the present*. New Haven, CT: Yale University Press.
- Innis, H. A. (1951). *The bias of communication*. Toronto, Ontario, Canada: University of Toronto Press.
- Innis, H. A. (1972). *Empire and communication* (rev. ed.). Toronto, Ontario, Canada: University of Toronto Press.
- Korzybski, A. (1933). *Science and sanity*. Lancaster, PA: Science Press.
- Langer, S. K. (1957). *Philosophy in a new key: A study in the symbolism of reason, rite, and art*. Cambridge, MA: Harvard University Press.

- Lee, D. (1959). *Freedom and culture*. Englewood Cliffs, NJ: Prentice-Hall.
- Luhmann, N. (1989). *Ecological communication* (J. Bednarz, Jr., Trans.). Chicago: University of Chicago Press.
- McLuhan, M. (1964). *Understanding media: The extensions of man*. New York: McGraw-Hill.
- McLuhan, M. & Parker, H. (1969). *Counterblast*. New York: Harcourt Brace & World.
- Meyrowitz, J. (1985). *No sense of place*. New York: Oxford University Press.
- Mumford, L. (1934). *Technics and civilization*. New York: Harcourt, Brace & World.
- Mumford, L. (1961). *The city in history: Its origins, its transformations, and its prospects*. New York: Harcourt, Brace & World.
- Mumford, L. (1967). *The myth of the machine: I. Technics and human development*. New York: Harcourt, Brace & World.
- Mumford, L. (1970). *The myth of the machine: II The pentagon of power*. New York: Harcourt, Brace, Jovanovich.
- Nevitt, B. (1982). *The communication ecology: Re-presentation versus replica*. Toronto, Ontario, Canada: Butterworths.
- Nystrom, C. L. (1997a, May 7). Various. Message posted to mediaecology electronic mailing list, archived at [gopher://ube.ubalt.edu:70/00gopher_root1:\[MEDIAECOLOGY\]mediaecology.1997-05](mailto:gopher://ube.ubalt.edu:70/00gopher_root1:[MEDIAECOLOGY]mediaecology.1997-05)
- Nystrom, C. L. (1997b, May 13). Observing the law. Message posted to mediaecology electronic mailing list, archived at [gopher://ube.ubalt.edu:70/00gopher_root1:\[MEDIAECOLOGY\]mediaecology.1997-05](mailto:gopher://ube.ubalt.edu:70/00gopher_root1:[MEDIAECOLOGY]mediaecology.1997-05)
- Ong, W. J. (1967). *The presence of the word*. Minneapolis: University of Minnesota Press.
- Ong, W. J. (1982). *Orality and literacy*. London: Methuen.
- Ong, W. J. (2000). *Reflections on the ecological age*. Unpublished manuscript, St. Louis University.
- Paglia, C. (1990). *Sexual personae: Art and decadence from Nefertiti to Emily Dickinson*. New Haven, CT: Yale University Press.
- Perkinson, H. (1995). *No safety in numbers: How the computer quantified everything and made people risk-averse*. Cresskill, NJ: Hampton Press.
- Rheingold, H. (1993). *The virtual community: Homesteading on the electronic frontier*. Reading, MA: Addison Wesley.
- Schafer, R. M. (1977). *The tuning of the world*. New York: Alfred A. Knopf.
- Schwartz, T. (1974). *The responsive chord*. Garden City, NY: Anchor Books.
- Soukup, Paul, SJ (1997, May 6). Re: naming. Message posted to mediaecology electronic mailing list, archived at [gopher://ube.ubalt.edu:70/00gopher_root1:\[MEDIAECOLOGY\]mediaecology.1997-05](mailto:gopher://ube.ubalt.edu:70/00gopher_root1:[MEDIAECOLOGY]mediaecology.1997-05)
- Whorf, B. L. (1956). *Language, thought, and reality*. Cambridge, MA: MIT Press.
- Theall, D. F. (1995). *Beyond the word : Reconstructing sense in the Joyce era of technology, culture, and communication*. Toronto, Ontario, Canada: University of Toronto Press.
- Theall, D. F. (1997). *James Joyce's techno-poetics*. Toronto, Ontario, Canada: University of Toronto Press.
- Wachtel, E. (1997, May 6). Re: organization. Message posted to mediaecology electronic mailing list, archived at [gopher://ube.ubalt.edu:70/00gopher_root1:\[MEDIAECOLOGY\]mediaecology.1997-05](mailto:gopher://ube.ubalt.edu:70/00gopher_root1:[MEDIAECOLOGY]mediaecology.1997-05)