Eco-Logic for the Composition Classroom

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> For we may rest assured that whenever we express ourselves ill, there is, besides mismanagement of language, for the most part some mistake in our manner of conceiving the subject.—Hugh Blair

THIS ARTICLE is not about a new way to teach composition; it is rather about new content that belongs in contemporary composition and rhetoric courses however they may be taught. Here is a definition of a key term in the article:

> **eco-logic** [from the modern English, *ecology;* from the Greek *oikos,* house or habitation, as in *oikonomia,* economy; the prefix *eco-* connotates wholeness[1]] 1. A logic designed for complex wholes. 2. Any logic which considers wholes as wholes, not by analyzing them into their component parts. 3. *Esp.,* a logical model appropriate for ecological phenomena.

Most composition textbooks are dominated by rhetorical modes that divide wholes into smaller units to be discussed individually or serially. The most common modes of development in textbooks which overtly present such modes are illustration, analogy, definition by genus and differentia, classification, division, comparison/contrast, process-analysis, and cause-to-effect analysis. Illustration is a rhetorical equivalent of induction; analogy is a rhetorical equivalent of deduction. All the remaining modes are ways to break down a subject into units which will be easier to handle. In process-analysis, for example, a whole process (e.g., teaching someone to swim) is broken down into a series of steps, which are then arranged and discussed in linear order.

These modes are highly appropriate to a particular type of subject: phenomena in which the whole is roughly equivalent to the sum of its parts. They are, however, inadequate for discussing the more complex phenomena which are increasingly relevant to contemporary realities. Our traditional rhetoric reflects the logic which dominated Western science and culture from the early-seventeenth through the mid-twentieth centuries. That logic was precisely the opposite of an eco-logic: far from being designed for understanding wholeness, it was a set of methods for reducing wholes into component parts, which could then be arranged in order and analyzed individually. Most of our thinking—from common sense to intrinsic literary criticism—is still based on this logic; many contemporary problems, especially our ecological difficulties, result in part from our using this logic inappropriately.[2]

[1] A Greek household was the smallest self-sufficient unit in the Greek economy. It was whole in the sense that it could survive without interacting with the rest of the economy. Consequently the Greek prefix *oiko-* had a connotation of wholeness which the modern English "household" does not but which the modern English prefix *eco-* retains.

[2] See Gregory Bateson, *Steps to an Ecology of Mind* (New York: Ballantine, 1972); Anthony Wilden, *System and Structure: Essays in Communication and Exchange* (London: Tavistock, 1972); Ervin Laszlo, *Introduction to Systems Philosophy* (New York: Gordon and Breach, 1972); Richard Coe, *Contemporary Critical Method, Science, Ideology and Reality* diss. (1972); and Richard Coe, "Intrinsic Critical Method," presented at the MMLA meeting, Chicago, 1973).

No matter how non-directive their teaching methods, all writing teachers inevitably give verbal (or nonverbal) feedback which reinforces certain patterns while discouraging others. The totality of those patterns is a rhetoric. Implicit in any rhetoric is a logic and a way of perceiving. Perhaps if students came to writing classes already highly skilled in observation and thinking, we could teach them just the rhetorical skills necessary to express those thoughts and observations clearly. Probably it would still be almost impossible. At any event, they do not come so well prepared, and so if we do not teach perceptual and logical skills overtly, we do so covertly.

If a paper is vague and lacks concrete detail because the writer did not observe sharply, we criticize it and (at least at the end of the term) grade it down. Our judgment is correct: the writing is vague and the paper does lack telling facts. The problem will be solved, however, only when the writer acquires more details by learning to observe better. We also mark down papers which do not "make sense." Our marginal comments may overtly be just about the writing: "disorganized," "this paragraph is irrelevant to your thesis," etc. But a writer who is not thinking clearly does not know what order will make for good organization or which details are relevant.

Observing, thinking, and writing, moreover, do not occur simply in that order; if they did, no one would ever have to do more than write one draft and make stylistic revisions. The process of writing often forces recognition of faulty thinking or inaccurate perception. That is why it is such an important part of a humane education. That is also why we are justified in spending part of a writing course stimulating and broadening perception, why we are justified in teaching prewriting techniques and logic.

It is no longer possible for any intellectually-informed person to think simply in terms of being logical vs. being illogical. As any mathematician or anthropologist can confirm, there are various logics. As long as we are socializing students to observe, think, and express themselves in particular modes, therefore, we may well choose modes which will be particularly useful in today's (and tomorrow's) world. My thesis is that we should teach rhetorical modes based on eco-logic as well as on analytic logic.

In an article of this length I will not be able to provide full inductive proof of this thesis or even a complete definition of eco-logic. I shall therefore proceed by illustration.

One ecological principle is that meaning is relative to context. It is thereby a fallacy to discuss a subsystem without considering the whole system or to discuss anything out of context. Unlike some eco-logical principles which appear to be radical departures from ordinary common sense, this one is merely an amplification of a familiar notion.

I will begin with a relatively complex example because eco-logic is not really necessary below a certain level of logical complexity. The Hindu "superstition" which protects India's sacred cows from being butchered for food is often criticized by Westerners, especially when we are asked to donate wheat during an Indian famine. Whatever the religious validity of not eating cattle because the souls of one's ancestors may inhabit the bodies of the cattle, the Westerners' common sense tells them that it is impractical not to eat available beef when one is hungry. That conclusion is true in the United States or Argentina or Europe. It is not only untrue but invalid in the context of India. It is invalid because the food shortage was evaluated without considering the broader problem of India's overall energy shortage. Food supply turns out to be a subsystem of energy supply; considering the food situation independently, therefore, leads to invalid conclusions.

The main ecological function of Indian cattle is to produce calories, which are utilized by people only indirectly. The cattle transform otherwise useless grass into dung. Most of the dung (80% according to one survey) is eventually collected by the peasants. Approximately half of what they collect is used as manure to fertilize their fields; the rest is used as fuel. Like the Native American Plains Indians and the pioneers who displaced them, the Asian Indians use dry dung as a major fuel source. It would take more than a billion tons of wood per year to produce as many calories of heat as the dung, and the Indian subcontinent is already badly deforested. Artificial fertilizer is a petroleum product: to buy oil for fertilizer or fuel would have severely disrupted the Indian economy even before the recent price increases. Eating many more of the cattle than are presently eaten by India's Moslems would destroy the economy and ecology of India. Once cattle have been butchered, it is difficult to breed them, so it is important that this conclusion was reached before anyone applied Western common sense to the situation. The question is what logical and rhetorical modes will lead people discussing this type of situation to ecologically-valid conclusions?

A traditional logician would detect two fallacies in the original reasoning. One fallacy involved assuming that an invalid argument indicates a false conclusion: in practical terms, the Hindu religious justification is invalid; the fallacy is to assume that no valid argument exists where none has been offered.

The other fallacy falls into the category of suppressed evidence, of telling the truth but not the whole truth. But no evidence was suppressed: indeed, it took an extraordinarily imaginative economic anthropologist to discover the missing evidence. He operated by presuming that there is a fit between any traditional culture and its environment. Biologists make the same working assumption about hereditary behavior and the environment in which it evolved. Gestalt and existential psychologists make the same assumption about individual behavior and the environment in which it developed. In all these fields, the context is called the environment, and the meaning of behavior is relative to context.

The same principle applies to communications symbols, even though the context is not usually referred to as the environment. A swastika has one meaning on a Nazi banner and quite another on a Navajo blanket. A clenched fist raised aloft may signify anger, agreement, or simply greeting—and only knowing the situation will tell you which.

Even verbal communications are relative to the context in which they are made. Let us say that I step up to a podium and announce that the sun is 93,000,000 miles from the earth. If that podium is in an elementary school auditorium that means that the sun is very far away from us. If that podium is at a national astronomers' convention, it means either that I am making a joke or trying to insult my audience (unless I am demented I am not trying to convey information to an audience of astronomers with that statement).

Ordinarily, most communications are appropriate to their contexts, and the contexts are so obvious to the participants that we overlook the importance of those contexts. In human behavior, moreover, contexts are often asserted nonverbally. In most offices, for example, an executive has a choice of two or three contexts in which to hold discussions. The president of your college, for example, may greet you from behind his desk, move to a conference table, or choose some comfortable chairs near a coffee table. You do not have to be an expert on nonverbal communication to pick up the tone that is established by that choice. The importance of such choices is exemplified by the long debates over table

shape that precede diplomatic conferences.

The principle that meaning is relative to context goes all the way back to the nature of human perception. If I show you two pieces of identical grey cloth, one bordered with light green and the other with dark purple, you will swear that the first is darker. If you hold one hand in cold water and the other in hot water until they have acclimated (about three minutes) and then place both hands in a container of lukewarm water, you will perceive two distinct temperatures.

Human beings do not perceive data. For one thing, there are too many data: at any given instant the eye alone is sending thousands of signals to the brain. As the gestalt psychologists demonstrated long ago, what we perceive is pattern. Indeed, human infants apparently have an innate predilection for patterns.[3] But many patterns can be perceived in any batch of sensory input. In order to see one of them, the observer must (consciously or unconsciously) make a set of choices about what to emphasize, what to de-emphasize, and what to ignore. Only because we usually associate with people who have been socialized to make the same choices that we ourselves make can we overlook this truth about human perception.

A large part of the context to which a written statement is relative can be denoted by the word *audience* (although it would be more precise to describe the context as the relationship between writer and audience). There is an old composition exercise which demonstrates the principle: have the students rewrite a very short narrative four times for four different readers (e.g., parents, best friend, a college admissions officer, a lover). It is a rare student who does not know how to regulate the tone and, if need be, the content, for each audience.

Also useful is a classroom exercise which, by providing unusual audience response, makes us aware of how dependent we are upon a standard response. Have the students pair off and sit facing each other with knees almost touching. One person from each pair presents a five-minute monologue, perhaps relating a recent frustrating experience. The other person mimicks distraction: e.g., listens for twenty seconds, then looks over at the clock, etc. Even though everyone knows it is being faked, this nonstandard feedback is amazingly disconcerting. It makes clear the fact that we ordinarily communicate in the context of a set of expectations about "normal" response. It also indicates that we do not send the message first and get the response second: if only imaginatively, we receive feedback during the communication as well as after we finish.

So long as the response is "ordinary" or the context "normal," we can ignore the principle that meaning is relative to context. That is the basis for the old-fashioned distinction between rules and principles. A rule is hard-and-fast—within a limited set of contexts—and can be memorized. A principle is more broadly useful—because it is usually about a relationship to contexts—but it requires thought. The rule that one should drive on the right side of the road works well in North America; in Europe, one would be better off with a principle about following local driving customs.

It was easy a decade ago to have backpackers memorize a rule about burying non-burnable garbage, but when the number of backpackers per acre reached a level where cans were being buried faster than steel can decompose, the rule had to be changed. The principle of preserving the natural eco-system now led to a new rule: carry out your non-burnable garbage. In the short run, rules are often easier; in the long run, principles

[3] Robert L. Fantz, "The Origin of Form Perception," *Scientific American* (May 1961), reprint number 459.

are more effective, and they also teach people to think for themselves.

Our judgments are often relative to context. Various optical illusions, like the Muller-Lyer arrows, will demonstrate that our judgments about size vary with context. The same is true of our ethical judgments. Take a list of denotatively identical acts in which "a man killed his brother":

1. Charles was drunk, lost control of his car, and ran Arthur down.
2. Needing money to buy a kidney machine which would save his wife's life, Charles poisoned Arthur to avoid sharing an inheritance of $40,000.
3. Hospitalized with a painful, incurable disease, Arthur begged Charles to put him out of his misery, and Charles complied.
4. Charles was in the Secret Service; he saw a man about to fire a rifle at the president. As he pulled his pistol, he realized the man was his brother, Arthur. Instantly, he shot him.

The old discussion exercise of choosing six out of ten people for a fallout shelter operates similarly if you then remake the choice for a lifeboat, a Peace Corps team, and a social club.

Contextual relativity has been ecologically valid for *Homo sapiens*. We are the most highly adaptable species on this planet because we are not ruled by highly-structured, rigid instincts. Instead we are able to behave in ways that are appropriate to surviving in various environments.

A male stickleback fish can have an instinctive reaction to the color red because in his normal environment the only red object will be another male stickleback, whom he should chase out of his territory. The honeybee can have a similarly rigid reaction to redness because most redness indicates flowers in the bee's normal environment. If a stickleback ends up in an odd context, like a window-ledge aquarium in a London laboratory, he may try to attack a passing postal van. The bee may spend a lot of time walking around on my red backpack.

Human beings ordinarily put sensory stimuli in context before responding. That is not such a reliable procedure, but it is much more flexible than an instinct. When I see a red light hanging over a highway, I stop. When I see a red light on a radio station control-panel, I start (talking). Actually, there is a sense in which I do not see a red light at all but see a signal.

This ability to perceive an object as a signal is part of our general ability to perceive abstractions. Ordinarily, this is a useful ability, but it is most apparent when it causes difficulties. During World War II, American soldiers in North Africa observed "dirty" Arabs: that is, they observed that Arabs did not wash before eating. Simultaneously, Arabs were observing "dirty" Americans: that is, they observed Americans eating with their left hands. Both groups have perfectly adequate sanitary habits: Americans usually wash before eating; Arabs, who are adapted to the desert, eat with their right hands and reserve their left hands for toilet functions. Both customs mean good hygiene.

Abstractions like "dirty" often come in sentences which imply that they are statements about observations, although they are really statements about relationships between observations and context. When I say, "This room is a mess," the rhetorical effect is often as if I were reporting a fact: the sentence is structured as if I were saying something about the room, whereas I am really saying something about the relationship between the room and my norms. It is only because most of us have relatively similar norms that we manage to overlook this distinction.

Once a context of expectation exists, the absence of an expected message can be as meaningful as, or more meaningful

than, the message. e.e. cummings's not using standard capitalization is an excellent example. A writer using non-standard spelling may be communicating illiteracy so loudly as to destroy the credibility of the intended message. According to structural linguists, the context of a word includes all the other words which could have been used in its place. If I say "law enforcement officer," a speaker of American English knows that I did not say "policeman" or "cop" and evaluates my message accordingly.

One could go on, almost forever, elucidating the various applications of the general principle that meaning is relative to context. Some sub-principles fall close to home in areas which have traditionally been discussed in English classes, like communication, language, clear thinking, etc. Other sub-principles fall on foreign soil, like the hard sciences. Let me draw just one more implication. If this principle is correct, our traditional rhetoric was not wrong. Neither was our traditional logic or our traditional perceptions. It is just that within the past few decades the world has changed so much that our traditional perceptions, logic, and rhetoric are no longer as well adapted as they once were. Consequently, they sometimes lead us into error.

When scientists started considering new types of problems, they were forced to find new logic systems and, at least mathematically, a new rhetoric. Those of our students who will become scientists could well use a verbal rhetoric which emphasized systemic interrelations instead of analytic separations. The same is true for citizens who will have to discuss ecological problems, the complexities of living in a mass society, or even the question of which traditions to retain and which to revise as the world changes.

This article has discussed one principle upon which that new rhetoric should be based if it is to create dialogues which will lead to useful understandings of contemporary realities. Elsewhere I have suggested other principles and modes for the new logic and new rhetoric.[4] At this point in time, specifics are not as important as the initiation of research and discussion. What matters is that teachers generally and rhetoricians in particular define the type of changes which are needed and begin to work on them together.

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[4]Richard M. Coe, "Rhetoric 2001," *Freshman English News*, 3 (Spring 1974).