

Gregory Bateson's Contribution to Understanding the Linguistic Roots of the Ecological Crisis

The five core ideas of Gregory Bateson discussed here challenge a widely held orthodoxy taken for granted by many academics, including western philosophers. Namely, that language functions as a neutral conduit in a sender receiver process of communication. This assumption sustains the idea of a culture-free rational process, and objective information and data. It also hides the linguistic colonization of the present by the past, which is critical to understanding why we continue to rely upon the same mind-set that is contributing to the ecological crisis to fix it. Bateson's five key ideas—the recursive nature of our guiding epistemologies, the disconnect between our conceptual maps (metaphorical interpretative frameworks constituted in the distant past) and today's cultural/ecological realities, how the difference which makes a difference is the most basic source of information circulating through both cultural and natural ecologies, the nature of double bind thinking, and the need to move to Level III learning—provide a conceptual framework for understanding the difference between ecological and individual intelligence, and why so little attention is given by environmentalists and philosophers to the linguistic roots of the ecological crisis.

Western philosophers have viewed themselves, and have been viewed by others, as engaged in the quest for wisdom about the nature of knowledge, values, aesthetics, political relationships, and the good society. The question today is whether the various western approaches to this quest were fundamentally flawed and thus irrelevant in today's world of global warming and rapid decline in the Earth's life-sustaining ecosystems. Part of the answer to this question can be established by assessing whether current western philosophy professors, as well as their students, understand that there is an ecological crisis that scientists are now telling us is within several decades of reaching a tipping point where no amount of human activity will reverse the rapid decline in the viability of the Earth's life-sustaining ecosystems. Thus, the basic question is: are current philosophy professors and their students aware that the oceans are becoming more acidic and thus threatening the bottom of the ocean's food chain, that coral reefs (home to 25

percent of ocean species) are dying, that scientists have introduced thousands of synthetic chemicals into the environment that are poisoning our bodies as well as that of other species, that global warming is melting the glaciers that are storehouses of water for millions of people, that extreme weather patterns are leading to droughts and floods that are occurring on a vast scale, and that species and habitats are disappearing at a rate that some scientists are referring to as the beginning of the sixth extinction? ¹

If students read and engage in deep discussions of the major works of Plato, Aristotle, Kant, Locke, Descartes, Smith, and even such contemporary philosophers as Dewey, are they likely to acquire wisdom about the cultural roots of the ecological crisis? Will the students' professors be able to help them recognize the cultural assumptions as well as silences that provided conceptual direction and moral legitimacy to the Industrial Revolution that has now entered its digital phase of globalizaton?

Another problem that that needs to be taken into account in assessing the relevance of the culturally context-free theories of western philosophers of previous centuries is the current widespread recognition that there are other cultures that have their own traditions of thinking, moral values, and history, and have in many cases made astonishing achievements. A review of the history of western philosophy reveals that there are only a few exceptions to their ethnocentric thinking. Today, this long tradition of ethnocentric thinking is increasingly being challenged as part of the process of cultural colonization.² Not only did western philosophers fail to recognize other cultural epistemologies, but by ignoring these cultures they contributed to a mind-set in the West that represented them as primitive even though

¹ See L. R. Brown, *Plan B 3.0: Mobilizing to Save Civilization* (New York: Norton, 2008); P. Shabecoff and A. Shabecoff, *Poisoned Profits: The Toxic Assault on Our Children* (New York: Random House, 2008).

² See W. Sachs (editor), *The Development Dictionary: A Guide to Knowledge as Power* (London, Zed Books, 1993).

many of them had developed a deep knowledge of the ecological systems of their bioregions, and of how to live within their limits.

One can only speculate about whether the thinking of western philosophers might have contributed to the knowledge and values that would have enabled people to live less environmentally destructive lives if they presented their ideas as part of the oral traditions of communities, rather than in the form of the printed word. Reliance on the technology of print made philosophers primarily accountable only to other abstract thinkers. Part of the legacy of cultures that privileged print-based storage and communication over oral traditions is that the printed word has been basic to creating the written treaties and maps that were part of the colonizing process. Print-based (that is, abstract) communication also led to universalizing the meaning of words such as freedom, individualism, progress, and so forth, which are based on western assumptions and mythopoetic narratives not shared by other cultures. The increased reliance upon the Internet further undermines the oral traditions essential to sustaining the diversity of the world's cultural commons that represent alternatives to being dependent upon consumerism, with all of its environmentally destructive impacts. Although there are many advantages to print-based knowledge and communication, it fosters abstract thinking and thus undermines awareness of differences in local contexts and tacit cultural understandings. Assessing today's relevance of what most western professors of philosophy present to their students should involve asking if philosophy professors are able to help their students understand how the differences between print and orality alters consciousness and thus ways of understanding relationships within different cultures. Would they be able to help their students understand how print,

when used within the context of other western assumptions, fosters a conduit view of language, and the myth of the autonomous thinker?³

Given the market-liberal forces that are contributing to the economic globalization that is undermining the diversity of the world's cultural commons and thus creating greater dependence upon consumerism that is ecologically unsustainable, another question needs to be raised about whether any of the major western philosophers address the question of how to conserve the intergenerational traditions of knowledge, skills, and mentoring relationships essential to resisting this community and ecologically destroying form of globalization? How many current western philosophy professors understand the nature and ecological importance of the local cultural commons?⁴ And if this is one of the areas of silence in the thinking of the major western philosophers, is it likely that their students will also be unable to recognize the local alternatives to a consumer-dependent and environmentally destructive existence?

The quest for wisdom, it would seem, needs to take account of the challenges faced today by the world's cultures. This will require giving attention to the complexity of local cultural contexts and traditions that have a smaller ecological impact. As suggested at the outset, the taken for granted assumptions shared by the major western philosophers—their ethnocentric thinking, their reliance upon a print-mode of communication, their lack of awareness and thus silence of how humans are dependent upon the natural systems, their indifference to the importance of the intergenerational knowledge that was the source of the skills and daily practices they took for granted as they were putting their abstract theories on paper—raises the

³ See W. Ong, *Orality and Literacy: The Technologizing of the Word* (London: Methuen, 1986).

⁴ See C. Bowers, *University Reform in an Era of Global Warming* (Eugene, Or.: Eco-Justice Press, 2011).

question of whether their respective quest for wisdom is largely irrelevant in today's world. Indeed, when their ideas are introduced into non-western cultures as though they represent a culture-free expression of rational thought, the ability of non-western students to recognize the importance of their own cultural traditions as sources of resistance to economic and cultural globalization, and of viable alternatives to living more ecologically sustainable lifestyles, is further undermined.

Plato's reification of abstract rationality, John Locke's justification of private property, René Descartes' mind-body separation and argument that traditions have no influence on the present, Adam Smith's arguments for giving free-markets that same ontological standing as the law of gravity, and John Dewey's Social Darwinian arguments that there is only one approach to knowledge, are not only irrelevant but are actually impediments to addressing the cultural roots of the ecological crisis. Given this legacy of thinking, perhaps the important challenge in today's world is identifying thinkers who avoid the misconceptions of earlier western philosophers? Before introducing the ideas of Gregory Bateson who is such a thinker, I want to emphasize that I am not proposing that western philosophers should not be studied.

Rather, the argument is that their silences and misconceptions that have particularly important implications for today's culturally diverse and ecologically challenged world should be the focus of inquiry. This would also include how their ideas continue to influence the thinking of policy makers who have only a surface knowledge of philosophical ideas—and who have reduced them to political slogans. This, of course, may not be possible, given the current philosophy professor's own education during the decades of the last century when few if any of their mentors were aware of the cultural forces that were accelerating the degradation of the world's natural systems,

and were contributing to the loss cultural languages that encoded knowledge of how to live within local ecosystems.

The possibility that philosophy courses might address the culturally and ecologically problematic assumptions in the thinking of major western philosophers is likely to be limited by the tradition of academic freedom which allows many faculty to avoid taking seriously the ecological crisis, and by the long-standing traditions of indifference to cultural and ecological issues within the discipline itself. An important question that needs to be investigated is whether the more senior faculty within the department will begin to revise their approach to teaching when a younger member of the faculty offers of course on environmental philosophy. Or will they maintain the old patterns and thus create for the students the sense of epistemological relativism where the environmental philosophy course has no more significance than a course on Descartes or Dewey?⁵

Many indigenous cultures such as the Quechua of the Peruvian Andes⁶ and the Western Apache of the American Southwest,⁷ as well as hundreds of other indigenous cultures in North and South America as well as in other Third World regions of the world, have developed what can be called “ecological intelligence.” The phrase is unlikely to be familiar to most western trained philosophers, as they are likely to associate ecology with the study of natural systems. In order to clear up a basic misconception before presenting an overview of Gregory Bateson’s understanding of ecological intelligence, and why it must supplant the western notion of individual

⁵ See the essays attempting to represent Dewey as an early environmental philosophy when, in fact, he ignores the environmental devastations of his era. A. Light and E. Katz, (eds) *Pragmatic Naturalism* (London: Routledge, 1996).

⁶ See F. Apffel-Marglin (editor) *The Spirit of Regeneration: Andean Culture Confronting Western Notions of Development* (London: Zed. Books, 1998).

⁷ See K. Basso, *Wisdom Sits in Places: Landscape and Language Among the Western Apache* (Albuquerque, N.M.: University of New Mexico Press, 1996).

intelligence if we are to have any chance of slowing the rate of environmental degradation, it needs to be pointed out how the Austrian promoter of Social Darwinian thinking, Ernst Haeckel, translated the ancient Greek word, *oikos*, to mean managing the household which he then associated with managing the household of natural systems. The new branch of scientific study he referred to as *oecologie* became by 1900 the study of ecological systems.⁸

Haeckel radically narrowed what the word *oikos* meant to the ancient Greeks. For them, it required an awareness of the norms that governed the traditional interdependencies and moral norms within the community, which extended far beyond those of the household.⁹ Thus, we have had nearly a century and a half of associating ecology with the study of natural systems. It has only been with the recent thinking of Gregory Bateson that the phrase “ecological intelligence” takes on a meaning that best describes the exercise of intelligence that takes account of the ecological nature of cultural and natural systems, and the ways they are interdependent. It is also important to note that the core ideas of Bateson that are most important to addressing how to live more ecologically sustainable lives avoid the problems identified earlier as the major reasons that western philosophers, as they are traditionally taught, are irrelevant in today’s ecologically stressed and culturally diverse world. That is, Bateson avoids the philosophers’ ethnocentric thinking, the abstract theorizing (even of the empiricists) that fosters the myth of individualism and of a rational process free of cultural influences, the anthropocentrism, and the failure to recognize both the destructive and empowering characteristics of traditions.

⁸ See D. Worster, *Nature’s Economy: A History of Ecological Ideas* (Cambridge, UK: Cambridge University Press, 1990).

⁹ See L. Nevett, *House and Society in the Ancient Greek World* (Cambridge, UK: Cambridge University Press, 1999).

That is, Bateson explains the cultural/linguistic dynamics of how professors focused on promoting cutting-edge critical thinking that supposedly leads to progress continue to be complicit in reinforcing the same deep cultural assumptions that underlie the industrial/consumer-oriented culture that is ecologically unsustainable. He also explains the changes in thinking that will be required if we are to learn to live in ways that do not jeopardize the prospects of future generations. Equally important is that his explanations, in being grounded in an understanding of cultural and natural ecologies, do not privilege one culture over others. In short, his analysis and prescriptions fit the current criteria for what should constitute wisdom in today's culturally diverse and ecologically threatened world.

Gregory Bateson was born into the family of a prominent British biologist in 1904, and died in 1980. He began his studies in zoology, but quickly shifted to the field of anthropology—which led to his early fieldwork in New Guinea. There he collaborated with Margaret Mead whom he married and later divorced. His first book, *Naven*, was influenced by his years in New Guinea, and reflected his early insights into the hidden cultural influences on the observers' perceptions and analysis. Upon his arrival in the United States, he began working in the field of psychotherapy and to participate in the early discussions of cybernetics. Both fields of inquiry led to his important insights into communication processes that he later identified as double bind thinking, which will be explained later in more depth. His last two books, *Steps to an Ecology of Mind* (1972) and *Mind and Nature: A Necessary Unity* (1979) are now recognized as his most important contributions.

Bateson's core ideas are not easy to grasp, partly for reason related the organization of *Steps to an Ecology of Mind*, and partly for reasons of how radically different his ideas were from the ideas and assumptions most people had acquired in public schools and universities. As Bateson

challenged these assumptions in a succinct manner, with equally brief explanations of alternative ways of thinking, most readers who were not prepared to rethink their own taken for granted assumptions found him difficult. That *Steps to an Ecology of Mind* contained a collection of essays and talks he had given to various groups made it even more difficult to obtain an understanding of how his key ideas represents a coherent conceptual framework that brings into focus the misconceptions that have been, and still are, major contributors of the ecological crisis. While many readers find it difficult to follow his responses to the ideas of Alfred North Whitehead, Carl Jung, and the various influences of cybernetic thinking, the clearest summary of his core ideas can be found in the sub-section of the chapter in *Steps to an Ecology of Mind* titled “The Cybernetics of ‘Self: A Theory of Alcoholism.’” *Mind and Nature* represents a more systematic presentation of his ideas, but it lacks cultural examples that the average reader can identify with

The task here will be to present the aspects of his thinking that are particularly relevant to understanding how western philosophers, as well as other academics outside of the sciences, continue to perpetuate the deep cultural assumptions that underlie economic globalization, and the individualistic consumer-dependent lifestyle. An even more difficult challenge will be to present his ideas in a way that avoids what he describes as a key mistake of thinking in the West: namely, thinking of things (plants, animals, people, ideas, and so forth) as distinct entities rather than in terms of their relationships within the larger ecology of which they are a part. Thus, while I will present separately the five most relevant of Bateson’s ideas for understanding why current ideas and values promoted in educational systems, and through the media and other venues of communication, continue to perpetuate the misconceptions and silences of earlier eras, the five key ideas should be understood as integral to a culturally and ecologically informed conceptual framework. In presenting his ideas, I will

expand on their implications in ways that are consistent yet go beyond what he has written.

The problem of recursive thinking in West:

While Bateson is focused on explaining the nature of recursive thinking in the West, and how it undermines making the transition from today's myth of individual intelligence to the culturally mediated exercise of ecological intelligence, he is not making the claim that recursive thinking only occurs in the West. Recursive patterns are now understood as existing in a variety of areas: mathematics, computer science, and in a culture's way of knowing. Bateson refers to the latter as a "recursive epistemology." As Bateson's explanations are seldom straightforward, but are always qualified and reworked in terms of his arguments with other thinkers, perhaps the most direct yet accurate explanation of what he means by a recursive epistemology is that it involves a continual process of "looping" back to earlier patterns of thinking.¹⁰ Recognizing the existence of recursive thinking is especially important as it challenges the western myth that change leads to new ideas and thus to a linear form of social progress. Indeed, the quest for new ideas, for innovations that will move economic markets to higher levels of performance, and for individuals to progress beyond the achievements of their parents, is taken for granted in the West—and now in other parts of the world that have adopted western assumptions. It is the basis of western hubris and the idea of exceptionalism. What is only now being recognized is that the West's idea of progress has been largely responsible for ignoring that the material and ideological expressions of progress have an adverse impact on the sustainability of natural systems.

¹⁰ As there are few references to recursive epistemologies in Bateson's two major books it is necessary to go to Bateson's personal notes, which are discussed in P. Harries-Jones. *A Recursive Vision: Ecological Understanding and Gregory Bateson* (Toronto: University of Toronto Press. 1995).

By identifying a dominant characteristic of thinking in the West as recursive in nature, Bateson is laying the conceptual basis for understanding the role of language, especially how the metaphorical nature of language carries forward the misconceptions and silences of earlier eras. Before discussing in depth the implications of his famous saying “the map is not the territory,” which he borrowed from Alfred Korzybski, it is important to identify examples of recursion in the thinking of western philosophers. Among the patterns of thinking, including the silences, that are repeated by western philosophers are the following: privileging of abstract theory, relying upon print-based storage and communication, assuming that their respective theories have universal validity which, in turn, reflects their ethnocentric pattern of thinking, and marginalizing the of importance of the intergenerational knowledge and skills that are the basis of living less monetized lives—and that vary from culture to culture.

The silences of Western philosophers also are examples of recursive patterns of thinking—including their indifference to considering the nature of other cultural epistemologies (a criticism that also applies to Dewey and Richard Rorty), the actual complexity and influences of traditions, and the interdependencies between humans and natural systems. How many of these recursive patterns are present in current liberal thinking in the West can be seen in how the key words in the liberal vocabulary reproduce the abstract, ethnocentric and culturally uninformed thinking of John Locke, Adam Smith, John Stuart Mill, and John Dewey. If we take into account the Social Darwinian assumptions that underlie the messianic (that is colonizing) spirit of liberalism, we would also have to include the thinking of Herbert Spencer. The key words in the social justice liberal’s vocabulary include individualism, freedom, progress, emancipation, critical inquiry, and social justice. The vocabulary of the market-liberals includes all of the above metaphors, with the exception of emancipation. The market-liberals

emphasis on promoting free markets precluded their ability to take seriously social justice. The shared vocabulary borrowed from the writings of western philosopher takes on entirely different meanings in non-western cultures, and thus reflects the abstract and ethnocentric thinking of western philosophers who influenced the choice of analogs that framed the original meaning of these words (metaphors).

Bateson observations about the recursive nature of epistemologies in the West takes on an importance that goes beyond what might be represented as the progressive development in the thinking of western philosophers. The dominant patterns of recursive thinking are having a huge impact on society's distribution of wealth, the use of technologies, the destruction of natural systems, the health of the people, the loss of employment, and the lack of knowledge of the community-centered alternatives to consumer-dependent lives. What Bateson describes as cultural epistemologies can be more easily understood as the root metaphors of the culture. Root metaphors, as described by Richard Brown in his book, *A Poetic for Sociology*, serve as the meta-cognitive schemas that underlie the largely taken for granted patterns of thinking.¹¹ In being taken for granted, their recursive nature is seldom recognized. What is important is that these recursive epistemologies or root metaphors underlie the various expressions of rationality that range from Plato's theory of eternal forms to Dewey's experimental inquiry. The authority of different root metaphors may vary over time, but the dominant root metaphors in different periods of a culture's history frame what is being thought and what is being ignored. Several examples will help bring clarity to Bateson's observation about how patterns of thinking continually loop back, thus repeating earlier patterns of thinking that are mistakenly represented as new and more enlightened thinking.

¹¹ See R.H. Brown, *A Poetic for Sociology: Toward a Logic of Discovery for the Human Sciences* (Cambridge, UK: University of Cambridge Press, 1977).

The root metaphor of patriarchy, like other root metaphors in the West, have their origins in the mythopoetic narratives of the culture or in a culture's powerful evocative experiences. For example, patriarchy was (and still is in most parts of the world) a taken for granted cognitive schema that framed how the attributes of women were to be understood. The attributes that framed the meaning of the word women thus limited for thousands of years their prospects in a wide area of social life. And like other root metaphors, this pattern of thinking was intergenerationally carried forward by the vocabulary that limited thinking to what previous generations had taken for granted. The introduction of an expanded vocabulary that named the achievements of women, and the questioning of how the assumptions underlying patriarchy could be reconciled with other dominant root metaphors in the West, such as individualism and progress, led many in society to question the taken for granted status of this root metaphor.

The recursive nature of mechanism, which is another root metaphor, can be seen in the following mechanistic patterns of thinking that have been repeated over the last three and a half centuries:

"My aim is to show that the celestial machine is to be likened not a divine organism but to a clockwork" Johannes Kepler (1571-1630)

"For what is the heart, but a spring; and the nerves, but so many strings; and the joints, but so many wheels, giving motion to the whole body...." Thomas Hobbes, from the *Leviathan*, 1651

Our conscious thoughts use signal-signs to steer the engines in our minds, controlling countless processes of which we're never much aware" Marvin Minsky, from *The Society of Mind*, 1985

"Like the computer, the human mind takes in information, performs operations on it to change its form and content, stores information, retrieves it when needed, and generates responses to it" Anita Woolfolk, from *Educational Psychology*, 1993

"The would-be writer in need of an idea can hop on the elevator and ride to the third floor where the 'splot' machine is waiting to offer a

creative spark. Each pull of the handle delivers a randomly generated wacky sentence, some even illustrated, to provide that creative starting point for the story" *Creative Writer*, 1994 (software program produced by Microsoft)

"But another general quality that successful genes will have is a tendency to postpone the death of their survival machines at least until after reproduction"

....Survival machines began as passive receptacles for the genes, providing little more than walls to protect them from the chemical warfare of their rivals and the ravages of accidental molecular bombardment." Richard Dawkins, *The Selfish Gene*, 1976

"The machine the biologists have opened up is a creation of riveting beauty. At its heart are the nucleic acid codes, which in a typical vertebrate animal may comprise 50,000 to 100,000 genes." E. O. Wilson, *Consilience*. 1998

This recursive root metaphor continues to influence thinking and cultural practices in a wide number of areas: ranging from agriculture, medicine, education, brain research, governmental policies, and the process of work itself. And like all root metaphors, its self-legitimizing vocabulary excludes other vocabularies, such as the language necessary for recognizing the nature of craft knowledge and skills, alternative values that cannot be measured and assigned a monetary value, and so forth.

Other root metaphors in the West that represent examples of recursive thinking include individualism, progress, anthropocentrism, economism, and evolution. As mentioned earlier, patriarchy as a culture shaping root metaphor is being challenged in western cultures, but is still prominent in other cultures; while ecology is an emerging root metaphor in the West—but long practiced as the basis of thinking and values in many of the world's indigenous cultures that faced extinction when they failed to live within the limits of their bioregions.¹²

¹² See J. Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking, 2005).

To summarize the importance of Bateson's insight about the nature of West's patterns of recursive epistemologies: what is often represented in the West as new and progressive is framed by these broad interpretative frameworks that reproduce the conceptual errors, silences, and prejudices derived from the distant past. Many of these root metaphors are mutually supportive when it comes to justifying such recent developments as genetically modified organisms, foreign policies promoting the West's model of economic development, the further expansion of the industrial system of production and consumption even as it introduces more toxins into the environment. Root metaphors must also be understood as influencing a wide range of cultural ways of thinking and practices over hundreds, even thousands of years. Perhaps most important is that their self-legitimizing vocabularies, as they are passed on from generation to generation, make it difficult to question them, and to be able to articulate the nature of other possibilities.

Alternative root metaphors, such as ecology, bring into question the root metaphors that gave conceptual direction and moral legitimacy to the industrial/individualistic, consumer-dependent culture that most people still take for granted. Whether the still dominant root metaphors (meta-cognitive schemas) become recognized, even within the scientific community that has adopted a more ecological way of thinking, is highly problematic—especially as most academics (including philosophers) still take for granted the root metaphors that each generation represents as the most progressive way of thinking. What is especially noteworthy is that the study of western philosophers, ranging from Plato to Dewey, has not led to recognizing the globalization-shaping recursive conceptual patterns that were constituted before there was an awareness of environmental limits.

Conceptual Issues Implicit in Bateson's Observation that the Map is not the Territory

As the ideas of Bateson being focused upon here are an integral part of his total conceptual system he refers to as an ecology of mind, the following discussion should be understood as related to the previous discussion of recursive cultural epistemologies (or the root metaphors that are the taken for granted meta-cognitive cultural schemas). His argument that the map is not the territory leads to recognizing another characteristic of language that has been obscured by centuries of western theorizing about the nature of knowledge, values, and so forth. That is, western philosophers have reinforced, along with other academic disciplines that have privileged print-based storage and communication, what Michael Reddy has referred to as a conduit view of language.¹³ This view of language, which assumes a sender/receiver model of communication that, in turn, supports the myth of communicating objective knowledge and a rational process that is free of cultural influences, has marginalized awareness that most words are metaphors. If this were more widely understood, then it would have been less likely that aspects of thinking of various western philosophers would have been interpreted by politicians and the general public as statements about universal realities, such as “free-markets,” “private property,” “rationality,” “survival of the fittest,” and so forth. That is, if the cultural and historical origins of how the choice of analogs that frame the meaning of word (metaphor) had been understood, the ideas of Locke, Smith, and Spencer, to stay with the above examples, might have been more easily understood as expressions of earlier culturally specific ways of thinking.

Bateson’s borrowed statement about the map not being the territory is a key part of how he explains the act of knowing as part of a more complex ecology of information exchanges. The following passage is also important to understanding what he means by ecological intelligence, which he sees as

¹³See M. Reddy, “The Conduit Metaphor—A Case of Frame Conflict in Our Language About Language,” In *Metaphor and Thought*, edited by Andrew Ortony(Cambridge, UK: Cambridge University Press, 1979, 284-323).

profoundly different from the view of individual intelligence that has been part of the recursive thinking the West (with Dewey being the major exception).

In *Steps to an Ecology of Mind*, he writes:

The mental world—the mind—the world of information processing—is not limited by the skin. Let us go back to the notion that the transform of difference traveling in a circuit is an elementary idea. If this is correct, let us ask what a mind is. We say the map (the metaphorical representations) is different from the territory. But what is the territory? Operationally, somebody went out with a retina or a measuring stick and made representations which were then put on paper. What is on the paper is a representation of what was in retinal representation of the man who made the map; and as you push the question back, what you find is an infinite regress, an infinite series of maps. The territory never gets in at all. The territory is *Ding an sich* and you can't do anything with it. Always the process of representation will filter out so that the mental world is only maps of maps of maps. All 'phenomena' are literally 'appearances.'

Or you can follow the chain forward. I receive various sorts of mappings which I call data or information. Upon receipt of these I act. But my actions, my muscular contractions, are transforms of differences in the input material. And I receive again data which are transforms of my actions. We get thus a picture of the mental world which has somehow jumped loose from our conventional picture of the physical world.¹⁴

In another place, he provides what may be a more easily understood challenge to the idea that individuals are autonomous thinkers. Again the idea of “transforms of differences” is important to understanding that the

¹⁴ See G. Bateson, *Steps to an Ecology of Mind* (New York: Ballantine Books, 1972, pp. 454-456 and 19).

cultural maps (historically and currently reconstituted metaphors) that are a taken for granted aspect of a person's thinking make the act of thinking the expression of a larger cultural ecology of mind.

The total self-correcting unit which processes information, or, as I say 'thinks' and 'acts' and 'decides,' is a *system* whose boundaries do not at all coincide with the boundaries either of the body or of what is popularly called 'self' and 'consciousness'; and it is important to notice that there are *multiple* differences between the thinking system and the 'self' as popularly conceived.

These two quotations, which admittedly may be difficult to grasp for the first time reader of Bateson's ideas, are based on his claim that the "territory," which may be the information being exchanged in either a cultural or natural system—or between them—is never accurately understood because of the individual's mistaken assumption that she/he is observing reality as it is. Bateson's saying that the maps (metaphorical constructions) are not the territory (the current transformations occurring in either or both the cultural and natural ecologies) is his way of pointing out that the supposed individual's thought, awareness, and source of meaning, are influenced by the language that she/he mistakenly takes for granted as an accurate representation of the external world. The maps, as we know from using a road map to guide us over the countryside, encodes the map-makers assumptions about what will be relevant to the traveler. And the map-maker's assumptions, and thus the map she/he produces, misrepresents many features of the territory such as geological formations, species near extinction, and so forth.

Metaphorically-based maps, that is the words and sentences used to describe and understand the external world that Bateson argues is in a constant process of undergoing transformations as differences circulate through the system and between systems, have many of the same

characteristics of road maps, or the mapping of territories which generally reflected the values and interests of the person who creates the map. First, Bateson is saying that words with the exception of conjunctions and prepositions are metaphors. Secondly, words have a history and are human/cultural constructions. That is, the analogs that frame the meaning of metaphors such as data, tradition, intelligence, woman, wilderness, and so forth, were constituted by earlier thinkers who reproduced the assumptions, misconceptions, silences, and insights of their era and culture. Third, when these metaphors are put together in sentences they often carry forward the earlier process of analogic thinking; which is another way of saying that earlier forms of cultural intelligence are often mistakenly represented as the original thought of an autonomous individual—and that words accurately represent reality.

The continual demand of educators that students present objective information or exercise their *own* thinking reflects the widely held view that language is a conduit in a sender/receiver process of communication, and that the metaphorical nature of language does not alter the student's (or professor's) rational process. Bateson is challenging this conventional wisdom by suggesting that words (metaphors) need to be understood as part of an ecology of language that takes account of both the history of analogic thinking that frames the current taken for granted meanings of words, as well as the impact that these metaphors, especially when they are part of an ecology of bad ideas, have on achieving an ecological sustainable future.

The linguist George Lakoff and the philosopher Mark Johnson have presented a different explanation of the nature of metaphorical thinking. After co-authoring the widely popular book, *Metaphors We Live By*, which made the argument that all thinking is based on metaphors, they collaborated on what they understood as a major challenge to the history of western philosophy. In *Philosophy in the Flesh: The Embodied Mind and Its*

Challenge to Western Thought, they argue that western philosophers failed to understand that their theories were based on a process of metaphorical thinking that they did not understand. However, it is important to note that Lakoff and Johnson were not making an argument similar to Bateson's distinction between maps and territory. Ironically, their radical reformulation of the basis of metaphorical thinking repeats the same silences found in nearly all of the major western philosophers, perhaps with the exception of Alasdair MacIntyre's *Whose Justice? Which Rationality?* which recognizes other cultural ways of knowing. It is important to note that the Lakoff/Johnson explanation of how the embodied experiences of the individual are the basis of metaphorical thinking relies upon the mechanistic language and thus the root metaphor that now dominates the field of brain research.

As their explanation of the nature of metaphorical thinking is so radically different from what common sense would suggest, it is necessary to quote them fully. The following represents their basic position:

Embodied Reason

- Embodied Concepts: Our conceptual system is grounded in, neurally makes use of, and is critically shaped by our perceptual and motor systems.
- Conceptualization Only Through the Body: We can only form concepts through the body. Therefore, every understanding that we can have of the world, ourselves, and others can only be formed in terms of concepts shaped by our bodies.
- Basic-Level Concepts: These concepts use our perceptual, imaging, and motor systems to characterize our optimal functioning in everyday life. This is the level at which we are maximally in touch with the reality of our environment.
- Embodied Reason: Major forms of rational inference are instances of sensorimotor inferences.

- Embodied Truth and Knowledge: Because our ideas are framed in terms of our unconscious embodied conceptual systems, truth and knowledge depend upon embodied understanding.
- Embodied Mind: Because concepts and reason both derive from, and make use of, the sensorimotor system, the mind is not separate from or independent of the body. Therefore, classical faculty psychology is incorrect.¹⁵

This list of characteristics could not be more categorical, nor can it take account of the cultural and natural ecologies that are now being stressed by over-population, poverty of living on less than two dollars a day, the micro and macro ecosystems that are undergoing rapid changes, and the cultures that vary from those that are major sources of environmental degradation and those that are still focused on renewing the intergenerational knowledge of sustainable living practices.

Bateson's two conceptual underpinnings of his theory about the nature and role of language—the recursive epistemologies (root metaphors) and the problem of conceptual maps (historically layered metaphorical constructions that never are fully adjusted to take account of the current transforms of differences occurring in the cultural and natural ecologies) can be applied to all cultures. This includes the mythopoetic narratives and evocative experiences that are the basis of a culture's root metaphors or epistemologies. There is nothing in the Lakoff and Johnson theory of the embodied origins of metaphorical thinking that takes account of these aspects of our world. The mechanistic connections between the embodied experience of the individual and the neural connections they postulate make it unnecessary to take account either of the historical and cultural influences on how the meaning of metaphors are framed. Nor does their theory of

¹⁵ See G. Lakoff and M. Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* (New York: Basic Books, 1999, p. 555).

metaphor take account of the need to recognize the historical misconceptions that still frame the meaning of such metaphors as individualism (which does not take account of the linguistic influences), community (that is often represented as excluding the biotic community), technology (that is often represented as both culturally neutral and a source of progress), and science (as based on a process of inquiry and experimentation that does not take account of the cultural and linguistic influences on the scientists' effort to introduce more synthetic chemicals as a way of controlling the environment), and so forth.

They are partly correct in claiming that the meanings of many metaphors, such as "inside," and "outside," "forward," and "backward," "up," and "down," and similar metaphors can be derived from the individual's embodied experiences. Indeed, Johnson has his students lie on the floor and adopt various physical postures that suggest the possible bodily origins of these simple metaphors. A case can even be made that the British system of measurement of inches, feet, yards, miles, stones, and hands were derived from embodied experiences that have been handed down for centuries, until the metric system was introduced. But the important question is: Can the Lakoff and Johnson theory of metaphor explain the root metaphors of patriarchy and anthropocentrism as being derived from the embodied experience of the individual? Or did the mythopoetic narrative in the Book of Genesis provide the explanatory framework and supporting vocabulary that led to people adapt their way of thinking, values, and behaviors to fit what was prescribed by these two mythopoetic narratives? Did the Quechua of the Peruvian Andes derive from their individualistic embodied experiences that are then encoded in the neural networks of their brain the guiding root metaphor that nature nurtures the people as the people nurture and respect nature? Or did this mythopoetic narrative derived from

their distant past lead today to their shared way of thinking of and behaving toward the natural world.

The Lakoff and Johnson theory of metaphor, which is now being widely accepted by other academics who lack the background necessary for questioning it, shares with the mainstream of western philosophy the same silences about the nature and influence of culture. It also shares the same ethnocentrism. More troubling is that their theory cannot be used to explain how the meanings of metaphors were framed in the past and thus continue to influence the culturally mediated embodied experience of the individual. For example, does the individual have to have an embodied experience of ethnic cleansing in order to understand what ethnic cleansing refers to? How can the implications of the world's oceans becoming more acidic, which is destroying the pteropods that are a key part of the food chain, be understood unless the individual has some form of embodied encounter with the effects of carbon dioxide on coral reefs and these tiny creatures? In effect, the Lakoff and Johnson theory of metaphor, unlike Bateson's culturally and ecologically grounded theory, cannot explain the complex understandings that are acquired from the linguistic communities into which the individual is born and which she/he mostly takes for granted in adulthood. If the embodied experience is prerequisite for understanding the meaning of metaphors such as "wilderness," "primitive," and "illiterate," which have had pejorative meanings, how is it that there is now some modicum of understanding that the early analogs that framed the meaning of these words reflected the misconceptions and prejudices of earlier times and of a particular culture?

Lakoff and Johnson attempt to explain how abstract reasoning occurs, even though they made the categorical claim, as cited earlier, that "we can only form concepts through the body." If they had recognized the overwhelming evidence of the history of metaphors and how their meanings

change over time as people introduce new analogs that change their meanings in ways that are more relevant to current changes in culture and natural systems, and that their meanings are framed by the historically prevailing root metaphors of the culture, which will vary from culture to culture, they would not have had to introduce what their basic claims deny as a possibility. That is, they move into the realm of abstract theory to explain the connections between what they refer to as metaphorical and abstract reason. They make the claim that “conceptual metaphors permit the use of sensorimotor inference for abstract conceptualization and reason. This is the mechanism,” they continue, “by which abstract reason is embodied.” They move even further into the realm of abstract speculation that has no foundation in empirical evidence when they go on to claim the following: “Abstract Reason: By allowing us to project beyond our basic-level experience, conceptual metaphor makes possible science, philosophy, and all other forms of abstract theoretical reasoning.”¹⁶

The juxtaposition of Bateson’s theory of metaphorical thinking with that of Lakoff and Johnson brings into sharper focus how the influence of root metaphors continues to marginalize an awareness of what philosophers should be addressing: namely, the cultural roots of the ecological crisis. Lakoff’s primary interest has been to introduce the general topic of metaphorical thinking into the field of brain research. To achieve this end he repeats the primary silences within this field of scientific research: namely, ignoring the connections between metaphorical language and cultural ways of knowing, the long-held western assumption about the autonomous nature of individual thought, and the complex issues surrounding the reduction of organic and mental process to mechanistic processes. The primary question they do not address is how their theory can be used to explain how awareness of the scientific evidence of radical changes in the life-sustaining

¹⁶ See *Philosophy in the Flesh*, p. 556.

capacity of natural systems can lead to changes in the meaning of metaphors that will enable people to begin questioning the taken for granted patterns of thinking that are exacerbating the ecological crisis. To make the question more specific: does their theory of metaphorical thinking take account of what Bateson refers to as “double bind thinking”?

Double Bind Thinking as at the Root of Ecologically Problematic Language Issues

Bateson’s theory of double bind thinking and communication is his third insight into the language issues that are critical to understanding why the West continues to promote, in the name of progress, ways of thinking, values, and a consumer-dependent lifestyle that scientists are identifying as a major source of environmental degradation. His explanation of the recursive epistemologies (or what I prefer to identify as the root metaphors that serve as interpretative frameworks), and the continued disjuncture between maps (metaphorical constructions) and the territory (current interactive patterns within cultural and natural ecologies), is given greater cogency by what he refers to as double bind thinking and communication. It was his work in clarifying the role of mixed and conflicting messages in communicating with patients suffering schizophrenia that eventually led to his incorporating a broader understanding of double bind thinking into a general theory of why ecological thinking is so difficult to achieve in the West.

At the level of interpersonal communication, double bind communication involves sending two conflicting messages where a response to either message leaves the victim unable to respond to the other message. The perpetrator of double bind communication is generally unaware that the messages “I love you” and “I need to punish you” or “I fully respect you” but “you must work harder” creates for the Other confusion about the nature of the relationship—and thus how to act in a way that does not violate one or both of the expectations that need to be fulfilled. Another example of double

bind communication occurs when the individual whose conscience leads to protesting the country's war is told that he/she must demonstrate more patriotism. Following what one's sense of moral reasoning dictates (which is valued by society), which means criticizing the policies of one's country, and being more patriotic in the sense of giving unquestioning support, also forces the individual to face two contradictory choices.

Double bind thinking that leads to destructive cultural and ecological practices are often a taken for granted part of life in many cultures. For example, many soldiers claiming to be Christians, which has as part of its moral code that one should love one's enemies, associate courage with being able to kill the enemy. Another example in European history involved the test of determining whether a person was a witch. The accused was tied to the end of a plank that was then immersed in water. If she/he sank this proved innocence, but resulted in the accused drowning. If the person floated this was taken as proof of guilt, which was followed by burning. This was a taken for granted way of determining guilt or innocence, and because it was taken for granted no one questioned the double bind faced by the accused.

Bateson's theory of double bind thinking and communicating has implications that he understood as at the heart of the ecological crisis. It is clearly expressed in the following:

If you put God outside and set him vis-à-vis his creation and if you have the idea that you are created in his image, you will logically and naturally see yourself as outside and against the things around you. And as you arrogate all mind to yourself, you will see the world around you as mindless. The environment will seem to be yours to exploit. Your survival unit will be you or your conspecifics against the environment of other social units, other races and the brutes and vegetables. If this is your estimate of your relation to nature and *you*

*have an advanced technology, your likelihood of survival will be that of a snowball in hell. You will die either of the toxic by-products of your hate, or, simply, of overpopulation and grazing. The raw materials of the world are finite.*¹⁷

This statement by Bateson brings into focus the double bind implicit in many of the West's recursive epistemologies. In the above quotation, the God-human relationship was understood in some interpretations of Christianity as giving humans the right to name and exploit nature. The double bind is in the relationship between being given the right to exploit endlessly the natural environment, when the natural environment is finite. Recently, some Christian groups, in recognizing the double bind that arises when there are no moral/theological limits placed on humankind's exploitation of nature, are introducing the idea of humans being "stewards" and thus protectors of God's creation.

When Bateson's theory of double bind is extended in ways that take account of ecologically unsustainable patterns of thinking, it is necessary to take account of what he refers to as "the problem of reification."¹⁸ Reifications can be understood in several ways. Reifications involve treating words such as "free-markets," "freedom," "objective," and so forth as being real in the sense of having a universal standing. The process of reification involves ignoring that they are metaphors and thus human constructions that encode a particular cultural way of thinking. This form of reification plays a prominent role in the process of double bind thinking. That is, the metaphors of free-markets and freedom, in being misinterpreted as having universal standing, fail to take into account what Bateson regarded as the importance of local contexts to thinking, communicating, and acting. Reified ideas and values, in effect, represent one order of falsified contexts in that their human/

¹⁷ See, *Steps to an Ecology of Mind*, p. 462

¹⁸ See, *Steps to an Ecology of Mind*, p. 271

cultural origins are being ignored. In short, the realm of abstract ideas and values that are so easily represented as universals is a falsified context.

There is also a falsification of culturally mediated fields of relationships and activities when they are described in print. The printed word “context” and even the phrases “local contexts and culture” also falsify contexts and represent another form of reification. This will be more easily understood after Bateson’s insights about what he refers to as the “transforms of difference” are discussed. Harries-Jones explains both the psychology and taken-for-granted dimensions of double bind thinking in the following way: “The double bind, for Bateson, involves a situation in which simple dilemmas [are] compounded by falsified contexts, supported by the patterns of interpersonal communication which ensures continuation of the denial that a falsified context [exists].”¹⁹

Again quoting Harries-Jones, “Bateson associates double bind thinking with some combination of denial and inflexibility derived from the cultural predisposition about the salience of rationality and rejection of holism.” Harries-Jones further notes that Bateson is very specific about the nature of this inflexibility when he writes in one of his letters that “as long as the West remains tormented by a false pride in individualism, it will pursue perversions of individualistic thinking. This tormented perspective,” Bateson continues, “can lead to strategies in which killing the whole biosphere becomes preferable to risking one’s own skin.”²⁰

What Bateson Means by His Claim that a “Difference which Makes a Difference” is a Unit of Information

The rest of the quote includes: “Such a difference, as it travels and undergoes successive transformations in a circuit, is an elementary idea” [or

¹⁹ See P. Harries-Jones, *The Recursive Vision: Ecological Understanding and Gregory Bateson* (Toronto: University of Toronto Press, 1995, p. 135).

²⁰ See, p. 227.

unit of information].²¹ This statement is the key to understanding his criticisms of how metaphors framed in the past by analogs that were influenced by earlier epistemologies are always inadequate for understanding the current cultural roots of the ecological crisis. It is also important for understanding why today's recursive epistemologies (root metaphors) lead to repeating the ecological mistakes of the past. A summary of what he is arguing against, which is clearly evident in the quotations reproduced here, includes: (1) That there is such a thing as an autonomous individual, event, or thing. For Bateson, the cultural epistemology that represented the above as distinct entities was the most basic falsification as they should have been understood in terms of relationships and as part of a larger ecology of differences which undergo transformations as they (differences) circulate through cultural and natural ecologies. (2) That the individual thinks about and acts upon an external world, rather than recognizing that she/he is an interactive participant in a world that is constantly undergoing change. Preconceived ideas based on abstract and largely print-based accounts, and taking for granted the myth of being an independent thinker and observer, often impede the individual's ability to recognize the differences which make a difference that are the most basic sources of information about changes occurring within different participants that are part of the larger ecological systems. (3) That one of the dominant characteristics of people influenced by the recursive western epistemologies is to assume that they are in control, and that reliance upon rational thought (which seldom takes the cycle of differences into account) leads to progressive outcomes which make it unnecessary to make explicit the double bind patterns of thinking.

The difference between how we are participants in the interactive world of transformative differences, and the patterns of abstract and double

²¹ W. Ong, *Orality and Literacy: The Technologizing of the Word* (London: Methuen, 1982, pp. 78-138).

bind thinking that western philosophers have reinforced, which have been amplified by the form of consciousness reinforced by print based storage and communication, can be seen in the following example that Bateson gives:

Consider a man felling a tree with an axe. Each stroke of the axe is modified or corrected, according to the shape of the cut face of the tree left by the previous stroke. The self-corrective (i.e., mental) process is brought about by a total system, tree-eyes-brain-muscles-axe-stroke-tree; and it is this total system that has the characteristics of immanent mind. More correctly, we should spell the matter out as (differences in tree)-(differences in retina)-(differences in brain)-(differences in muscles)-(differences in movement of axe)-(differences in tree), etc. ²²

For the typical western individual, it is unlikely that she/he is explicitly aware of the cycle of differences that are part of the experience of swinging an axe in ways that take account of the changes caused by the previous strokes—which may in turn have been influenced by earlier differences in weather patterns that led to the isolated tree that develops more branches and thus more knots that will lead to differences in how hard the individual swings the axe. Instead, as Bateson notes, the individual is likely to say that “I cut down the tree,” which represents the individual as outside and thus not part of the ecology of transformative information circulating through the system.

The person sailing a boat is particularly focused on the differences that make a difference, especially if she/he is concerned with winning the race or, in certain conditions, keeping the boat from capsizing. The ripples and whitecaps on the water, the force and direction of the wind, the direction and speed of the current, the

²²²See *Steps to an Ecology of Mind*, p. 317.

darkening clouds are all differences (information) which make a difference that lead to making constant adjustments of the tiller and the angle of the sails to the wind. Playing a game of chess, tennis, soccer, or being engaged in a conversation all involve responding to differences which make a difference in the behavior of the Other. And again, the individual is not always explicitly aware of giving these transformative differences special attention. Often the patterns of adjustment, which in turn lead to differences in the surrounding interacting social and natural systems, involve reenacting cultural patterns at a taken for granted level of awareness.

Natural ecologies that range from forests, oceans, GMO crops, small backyard gardens to the micro level of how electro-chemical processes that govern the genes' program of organ development undergo changes as toxic chemicals are encountered. In short, life processes are driven by the continual cycle of transformative differences; transformative in the sense that they lead to changes in the Other—which in turn feed back through information pathways to affect the other participants in both the cultural and natural systems. Information, for Bateson, may take many forms ranging from differences in chemicals, temperature, moisture, to changes in the tone of voice, the glance at one's watch, the gentle touch on the shoulder following an argument. And it varies from the micro to the macro level where changes in the chemistry and temperature of the ocean leads to changes in the habitats of fish, the changes in precipitation patterns, to extreme weather conditions—which in turn affects the transformative difference circulating in other cultural and natural systems.

For Bateson, there is no such thing as an isolated event, plant, or human behavior that exists independent of the information pathways that affect the immediate and long-term viability of the ecosystems. The

statement quoted earlier about the “total self-correcting unit which process of information” is not limited to the thought process of the individual; but “is a *system* whose boundaries do not at all coincide with the boundaries either of the body, or what is popularly called the ‘self’ or ‘consciousness’; and it is important to notice that there are *multiple* differences between the thinking system and the ‘self’ as popularly conceived.” Like the metaphors of “idea” and “thinking,” he is not using them in the conventional human-centered way. His use of “thinking system” in the last sentence refers to responding to the differences which lead to the range of transformations that are as complex as the ecosystem—which in turn leads to transformations in the patterns that connect within nearby ecosystems.

Bateson often uses the metaphor of Mind when referring to the world of interconnected and interdependent ecosystems. While he recognizes that there are ecologies of bad ideas, it is the survivability of the world’s total system that leads him to articulate the moral guideline for human/nature relationships. He sums it up in the following way:

Thus, in no system which shows mental characteristics can any part have unilateral control over the whole. In other words, *the mental characteristics of the system are immanent, not in some part, but in the system as a whole.*²³

Ecological Intelligence and Level III thinking

Bateson identified three levels of human learning. The first, which he labels as Learning I, fits the classical Pavlovian model of learning shaped by rewards and punishments. Level II learning encompasses a wide range of learning behaviors, but essentially involves the taken for granted the ways of thinking, values, and patterns of behavior acquired through uncritical approaches to socialization. What is taken for granted varies from culture to

²³See, *Steps to an Ecology of Mind*, p. 316

culture, and encompasses how to think about a wide range of cultural activities and relationships. In the West, this includes thinking of oneself as an autonomous individual, language as a conduit in a sender/receiver process of communication, print-based knowledge as more reliable than the spoken word, that abstract theory does not have to be checked against the culturally mediated embodied experiences in different contexts. It also includes a wide range of cultural patterns ranging from the moral values encoded in the analogs that frame the meaning of metaphors, the vocabularies dictated by the prevailing root metaphors, so forth. In short, Level II learning lacks both an historical and a critical perspective, and is best described as exhibiting what has been described here as individual and ego-centered intelligence.

Level III learning, or what more accurately can be called ecological intelligence, involves awareness of the transforms of difference which circulate and undergo change within the cultural and natural contexts that are part of daily experience. As suggested earlier, people exercise ecological intelligence when they give attention to the multiple sources of information being communicated to them (differences which make a difference) as they are preparing a meal, playing a game, engaging in dialog with others, preparing the soil for planting, and so forth. They are also exercising ecological intelligence when they resist the introduction of new technologies such as GMO seeds, the use of pesticides, greater reliance of technologies that release vast amounts of carbon dioxide and other poisonous chemicals, and so forth. Exercising ecological intelligence is involved in altering one's personal lifestyle in ways that reduce dependence upon consumerism and the money economy, while at the same time participating more fully in revitalizing the cultural commons of intergenerational knowledge, skills, and mentoring relationships that have a smaller ecological footprint.

There are other characteristics of ecological intelligence that set it apart from Level II learning and thinking. While the latter lacks an awareness that words have a history and, in many instances, carry forward the misconceptions of earlier eras, ecological intelligence involves a more critical view of language and the epistemological frameworks that others take for granted. In short, language is understood from a cross cultural and historical perspective, and asks about how its various metaphorical representations lead to cultural practices that strengthen or undermine the viability of natural systems—as well as other cultures. That is, ecological intelligence takes account of the role of language in maintaining various status systems, including human/nature relationships.

Bateson sums up another key difference between Level II and Level III learning when he wrote that “To the degree that a man achieves Learning III, and learns to perceive and act in terms of contexts of contexts, his ‘self’ will take on a sort of irrelevance. The concept of ‘self’ will no longer function as a nodal argument in the punctuation of experience.²⁴ His observation is something we have all experienced as we are fully engaged in responding to the information pathways that are integral to the context of a game, a conversation, in a mentoring relationship, in performing with a musical group, and so forth. Perhaps the most essential characteristic of ecological intelligence is the awareness of being involved in ways that do not have an

²⁴ See, *Steps to an Ecology of Mind*, p. 304.

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adverse impact on the micro and macro ecosystems that others, both human and animal, depend upon.