AN OVERVIEW OF INTEGRAL ECOLOGY

A Comprehensive Approach to Today's Complex Planetary Issues

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> Gaia's main problems are not industrialization, ozone depletion, over-population, or resource depletion. Gaia's main problem is *the lack of mutual understanding and mutual agreement*. . .about how to proceed with those problems. We cannot reign in industry if we cannot reach mutual understanding and mutual agreement based on a worldcentric moral perspective concerning the global commons. And we reach that worldcentric moral perspective through a difficult and laborious process of interior growth and transcendence.
>
> *– Ken Wilber*

Since its inception in 1866, with Ernst Haeckel's publication of *General Morphology of Organisms*, the field of ecology has multiplied, divided, and morphed into numerous schools and subschools. Each such school is an attempt to capture something not included by other approaches. Every knowledge niche seems to have a corresponding school of ecology connecting its insights to the understanding of ecological processes and environmental dynamics. With the emergence of new schools of ecology, as with most disciplines, there is a tendency for the nascent approach—the "new kid on the block"—to define itself against existing approaches in order to justify its particular position. All too often, fences are built between approaches where bridges are needed, and some approaches pair up with each other to discredit other seemingly misguided approaches. The net result is a fragmented field of various approaches either pitted against each other or in alliance through protective politics.

So what is someone concerned about the environment to do when confronted with the magnitude of variety that currently exists within the field of ecology and environmental studies? How is an activist, scientist, or philosopher expected to be effective in the face of such multiplicity? No wonder the world of ecology is in such disarray—it has grown so big that it no longer knows itself. For instance, all too often practitioners of *landscape ecology* have never heard of *environmental aesthetics*; *environmental philosophers* do not know the difference between *population ecology* and *community ecology*; individuals working in the field of *acoustic ecology* do not know about *linguistic ecology*.

Today there is a bewildering diversity of views on ecology and the environment. With more than 200 distinct and valuable perspectives on the natural world—and with researchers, economists, ethicists, psychologists, and others often taking completely different stances on the issues—how can we come to agreement to solve the toughest environmental problems of the 21st century? We need a framework to help sort through these many approaches and connect them in a pragmatic way that honors their unique insights on their own terms. Integral ecology provides this framework: a way of integrating

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multiple approaches to ecology and environmental studies into a complex, multidimensional meta-disciplinary approach to the natural world and our embeddedness within it. Integral ecology unites valuable insights from multiple perspectives into a comprehensive theoretical framework, one that is already being put to use around the globe. This framework is the result of over a decade of research exploring the many perspectives on ecology available to us today and their respective methodologies. In short, this framework provides a way of understanding the relationship between *who* is perceiving nature, *how* the perceiver uses different methods, techniques, and practices to disclose nature, and *what* is perceived as nature.

Integral ecology is a comprehensive framework for characterizing ecological dynamics and resolving environmental problems. It is comprehensive in that it both draws upon and provides a theoretical scheme for showing the relations among a variety of different methods, including those at work in the natural and social sciences, as well as in the arts and humanities. Integral ecology unites, coordinates, and mutually enriches knowledge generated from different major disciplines and approaches. Integral ecology can be: a) applied within a discipline (e.g., by integrating various schools of ecology); b) applied as a *multi*disciplinary approach (e.g., by investigating ecological problems from several disciplines); c) applied as an *inter*disciplinary approach (e.g., by using social science methods to shed light on economic or political aspects of environmental values); and d) applied as a *trans*disciplinary approach (e.g., by helping numerous approaches and their methodologies interface through a well grounded meta-framework).

The integral ecology framework has promising applications in many areas: outdoor schools, urban planning, wilderness trips, policy development, restoration projects, environmental impact assessments, community development, and green business to name a few. In fact, a wide variety of ecologists, environmentalists, urban planners, wilderness guides, and activists recognize the theoretical comprehensiveness and practical efficacy of integral ecology and have been using its principles and distinctions successfully in a variety of contexts: community development in El Salvador, marine fisheries in Hawaii, eco-activism in British Columbia, climate change initiatives in Norway, permaculture in Australia, environmental policy in Tasmania, sustainable consumption and waste reduction in Calgary, and urban design in Manitoba.[1]

The Four Quadrants

The integral ecology framework draws on integral theory as developed by American philosopher Ken Wilber.[2] Integral theory provides a content-neutral framework—the AQAL model—that has been developed over 30 years and is being used in over 35 professional disciplines (e.g., economics, law, medicine, art, religious studies, psychology, and education). According to integral theory, there are at least four irreducible perspectives (objective, interobjective, subjective, and intersubjective) that must be consulted when attempting to understand and remedy environmental problems. These perspectives are represented by four quadrants: the interior and exterior of individual and collective realities. These four quadrants represent the intentional ("I"), cultural ("we"), behavioral ("it"), and social ("its") aspects of ecological issues (see fig. 1).

Put briefly, the *objective* perspective examines the composition (e.g., physiological and chemical) and exterior behavior of individuals such as humans, bears, salmon, redwoods, or beetles. The *interobjective* perspective examines the systemic structures and exterior behaviors of collectives, ranging from

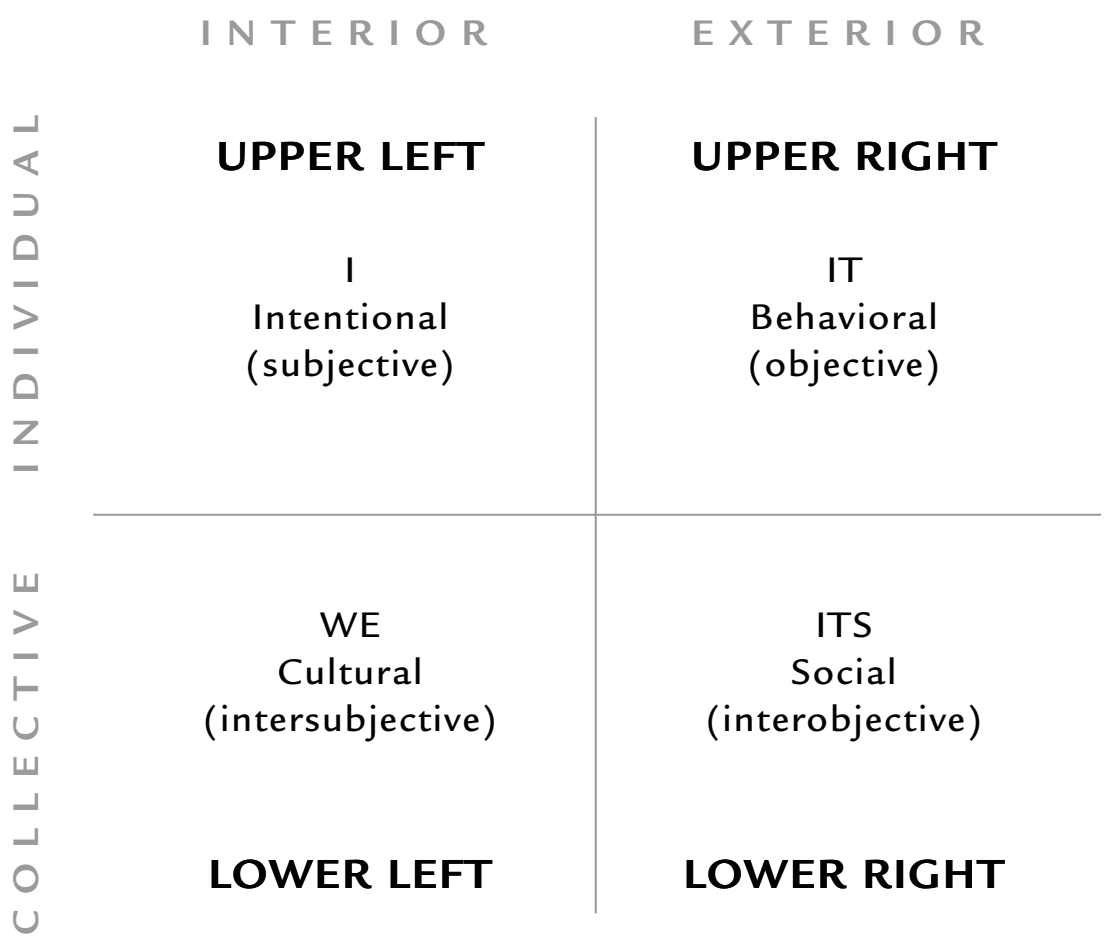

Figure 1. The four quadrants.

human socio-economic systems to ecosystems. Data generated by methods belonging to objective and interobjective perspectives are valuable, but they neither provide an exhaustive understanding of the problem at hand nor do they necessarily provide motivation for action. Technical information alone cannot persuade people to act. Motivation arises when we experience a given environmental problem through two additional perspectives—*subjective* and *intersubjective*. Academic and public environmental efforts only infrequently approach problems with awareness or appreciation of the role played by these interior perspectives, including aesthetic experience, psychological dynamics, religious meaning, ethical issues, and cultural values.

Integral ecology labels these four irreducible perspectives as follows: *terrain of experience* (first-person subjectivity), *terrain of culture* (second-person intersubjectivity), *terrain of behavior* (third-person objectivity), and *terrain of systems* (third-person interobjectivity). In other words, integral ecology recognizes and draws on first-, second-, and third-person perspectives. The perspectives are irreducible because, for example, a first-person perspective contains important aspects of a situation that are not captured or represented by a third-person perspective. When I say, "I feel devastated as I look at this polluted stream," I am speaking from a first-person perspective. The perspective informing my assertion cannot simply be replaced by a third-person perspective, which would issue forth a

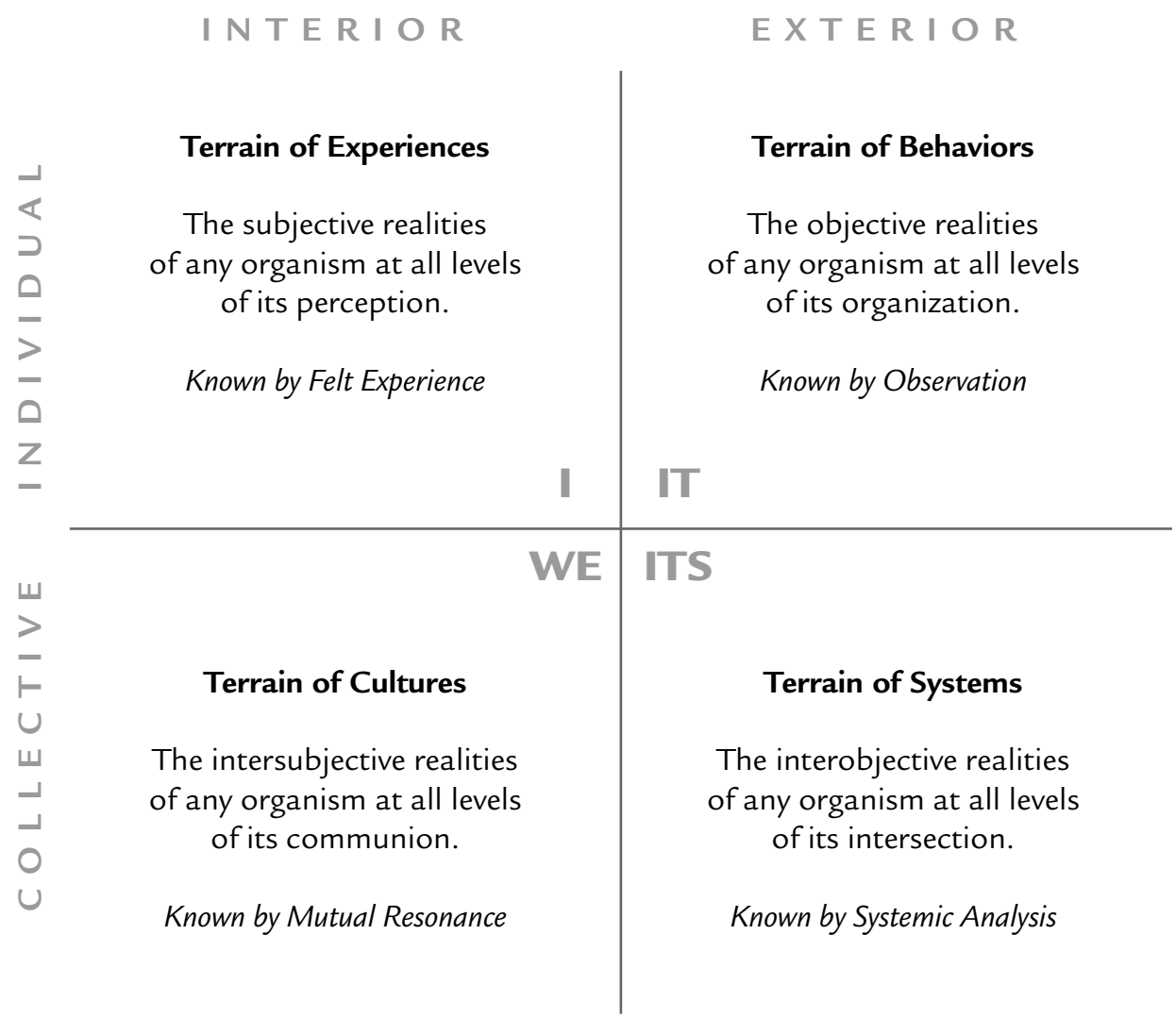

Figure 2. The four terrains.

statement such as: "That person sees the polluted stream." There is quite a difference between simply "seeing" the polluted stream and "feeling devastated" by it. Likewise, the second-person significance of a multi-stakeholder gathering, which brings together culturally divergent and even contentious worldviews, cannot be equated with the third-person function that the meeting may have in socio-economic terms. Each of these terrains highlights a different and essential aspect of reality and are known through different types of methodologies and practices (see fig. 2).

These four perspectives are often used to *look at* an environmental problem or ecological reality, either informally or through formal disciplinary traditions. Following is a simple example of an integral understanding of the problem of toxic emissions. Each section briefly examines toxic emissions from a different terrain highlighting the kinds of perspectives that would be included in looking at and addressing this issue.

The Integral Ecology of Toxic Emissions

Terrain of Behavior

Toxic chemicals can cause (or trigger) various deleterious effects in the behavior and structure of individual cells, organs, and organisms. We must study, measure, and describe these so that more comprehensive grounded recommendations can be made about limiting their release into the environment. In other words, it is important both to understand how individual behavior, structures, and health are effected by toxins at all levels of ecological organization (from cells to organs to organisms), and to look closely at how human behaviors in our daily activities contribute to and sustain environmental toxicity.

Terrain of Systems

Systems may be defined as enduring patterns of relationships that help theorists to explain how individuals or groups relate to one another. Organisms are members of and are sustained in part by their

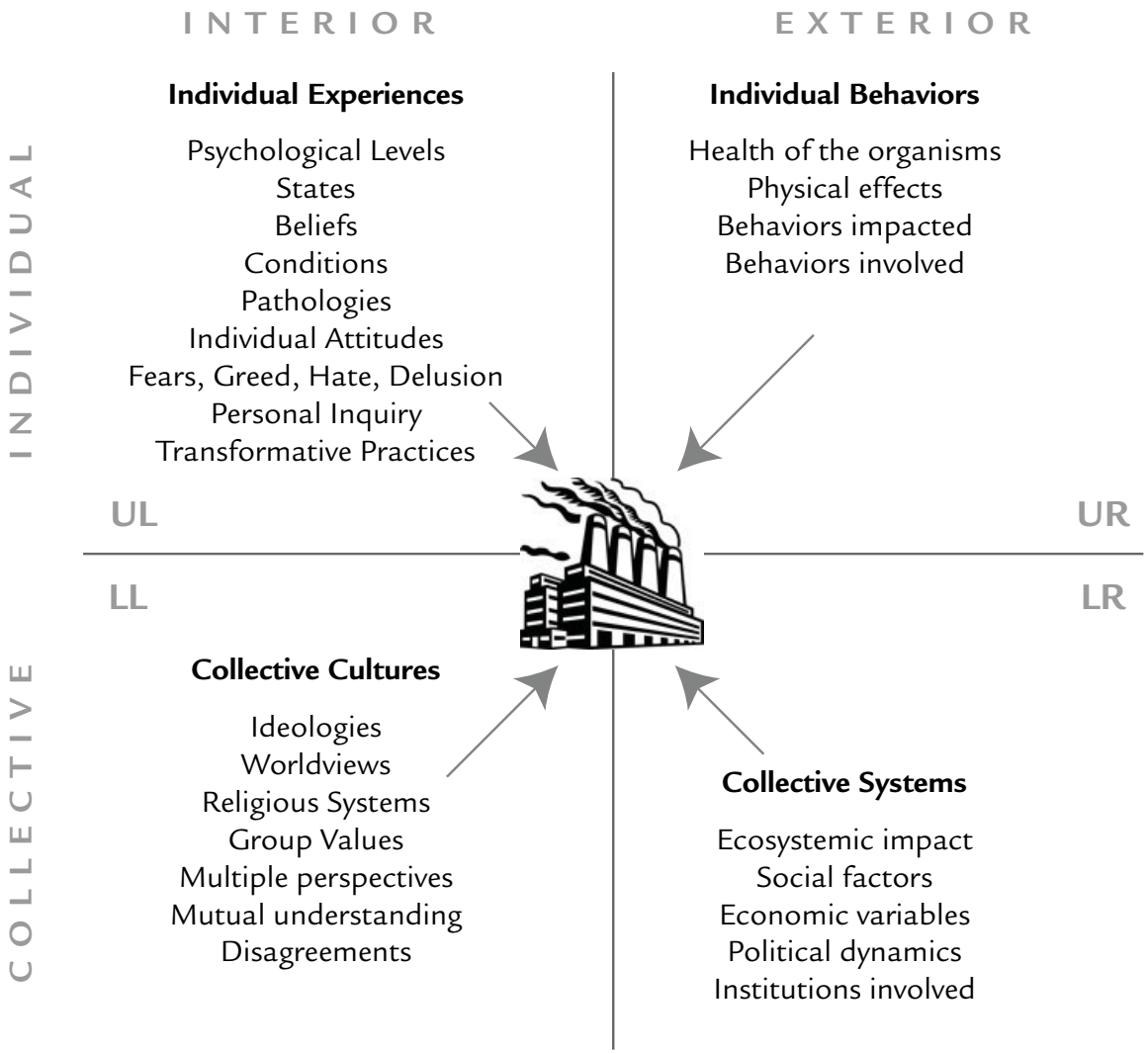

Figure 3. Four views on toxic emissions.

ecosystems, defined as interrelated and interdependent organic communities and their physical environments. If toxins poison insects that constitute part of the food chain on which frogs depend, frogs will become sick or die. In turn, frogs form part of the food chain of larger animals, including birds, which will be harmed by ingesting poisoned frogs. In addition to studying ecosystemic consequences of toxic emissions, integral ecologists must also examine the various social, economic, and political structures involved in the production and release of toxic emissions. Social theorists define such structures as relatively stable patterns, rules, and institutions that shape the interactions among social agents, and often regard social structures as more fundamental than the individuals that are shaped and even made possible by such structures. Although resisting such reductionism, integral ecologists recognize the importance of understanding the scope of, interactions among, and limitations of pertinent social structures. In fact, such understandings are crucial for suggesting alterations of and alternatives to existing social structures.

Terrain of Culture

In addition, integral ecologists must examine cultural factors, namely how ideologies, worldviews, religious systems, and values encourage, discourage, or are neutral with regards to toxic emissions. Various worldviews (e.g., conservative Christian, scientific-rational, or postmodern) will be motivated to take corrective action for very different reasons. Hence, integral ecology encourages us to understand the various worldviews involved with the issue. Developing mutual understanding between individuals and their worldviews is critical to resolving the problem. However, achieving such understanding is by no means easy and is one reason why this dimension is typically neglected in current ecological efforts.

Terrain of Experience

Our direct experience of ourselves, other people, and the natural world plays an important role in how we approach the environment. Integral ecology recognizes that psychological capacities, states of consciousness, beliefs, and mental conditioning all shape our individual attitudes about issues like toxic emissions. We must understand these different psychological dimensions and their role in creating motivations and beliefs about toxins and the environment. Integral ecology holds that transformative practices such as therapy, contemplation, meditation, and community service help individuals discover the roots of their attitudes, beliefs, and emotions that give rise to care for or the neglect of the environment. Transformative practices can support individual development, which in turn can affect collective attitudes and practices, leading to new institutions, which further support interior development. Until we can create healthy expressions of our divergent worldviews and until we have leaders who embody an ethic that embraces all people and the planet we live on, we will continue to misuse nature.

These four terrains provide a way to explore the many conditions that give rise to environmental issues. Each terrain represents a unique dimension of ecology that we must consider if we want a comprehensive understanding and comprehensive solutions. Each terrain is obviously more complex than what is described in this simple example. We hope, however, that you the reader can *feel* and *see* the value of including all four terrains (and their respective disciplines) in addressing ecological realities and environmental issues.

Animal Perspectives

In addition to highlighting the four perspectives that humans can take when approaching environmental issues, integral ecology asserts that all organisms—by virtue of their sentience—can also take these perspectives. In other words, the capacity to take first-, second-, and third-person perspectives is not limited to human beings. Thus, in addition to being able to take third-person perspectives through their sense organs (e.g., eyes, ears, nose), animals have perspectives that make possible experiences of their own in ways analogous to human first- and second-person perspectives and experiences. Individual animals can be and often are understood *merely from one perspective* as "parts" of an ecosystem, but such an understanding is incomplete. Because animals are also "members," and thus not only "parts" of ecosystems, they have experiences and cultures of their own that should be taken into account when describing them in their habitat. Ecologists and environmentalists would benefit by becoming aware of the substantial body of research supporting this understanding of organisms. (See, for example, the work of ecologist Marc Bekoff, ornithologist Irene Maxine Pepperberg, and primatologist Frans de Waal, to name just a few of the researchers focusing on animal interiors).

The four terrains, then, may be understood in two related ways. First, the four terrains refer to the four perspectives that an integral ecologist can take in order to characterize and to ameliorate an environmental problem, such as toxic emissions that are harming organisms and the environment. Second, the four terrains refer to the perspectives that any organism can take and in fact does take with regard to itself, other organisms, and its ecosystemic context. As an example of what we are talking about, let us take a quick tour of the four terrains or perspectives of a frog.

A frog experiences itself and its world through four distinct modes of non-reflective perception: the subjective perception of basic sensations; the objective perception of the five senses; the intersubjective perception of resonance with another organism; and the interobjective perception of social and ecological dynamics. Each of these modes of basic awareness reveals a different world: an intentional world, a sensory world, a cultural world, and social world (see fig. 4).

The Frog's Intentional World

The terrain of experience includes the frog's subjective or intentional world. In the early 1900s, German biologist Jacob von Uexküll pioneered work in the "subjective universe" of animals. His work serves as a foundation to the field of biosemiotics, which studies how organisms interpret "signs" in their environment. This terrain represents the frog's first-person awareness—its somatic experience of hot and cold water, physical pain, pleasure, and various impulses. The frog does not have a self-conscious relationship to these experiences, but it does have an interior that supports a variety of subjective experiences, even if they are relatively simplistic.

The Frog's Sensory World

The terrain of behavior includes the objects of the frog's senses and capacity to perceive movement and differentiate its surroundings. For example, the field of sensory ecology provides insight into the sensorial capacity of organisms and how they register pheromones, visual stimuli, auditory cues, skin sensations, and tastes. Accurate perception is crucial for the frog's survival. This terrain also includes how the frog registers its environment and interfaces with it as a result.

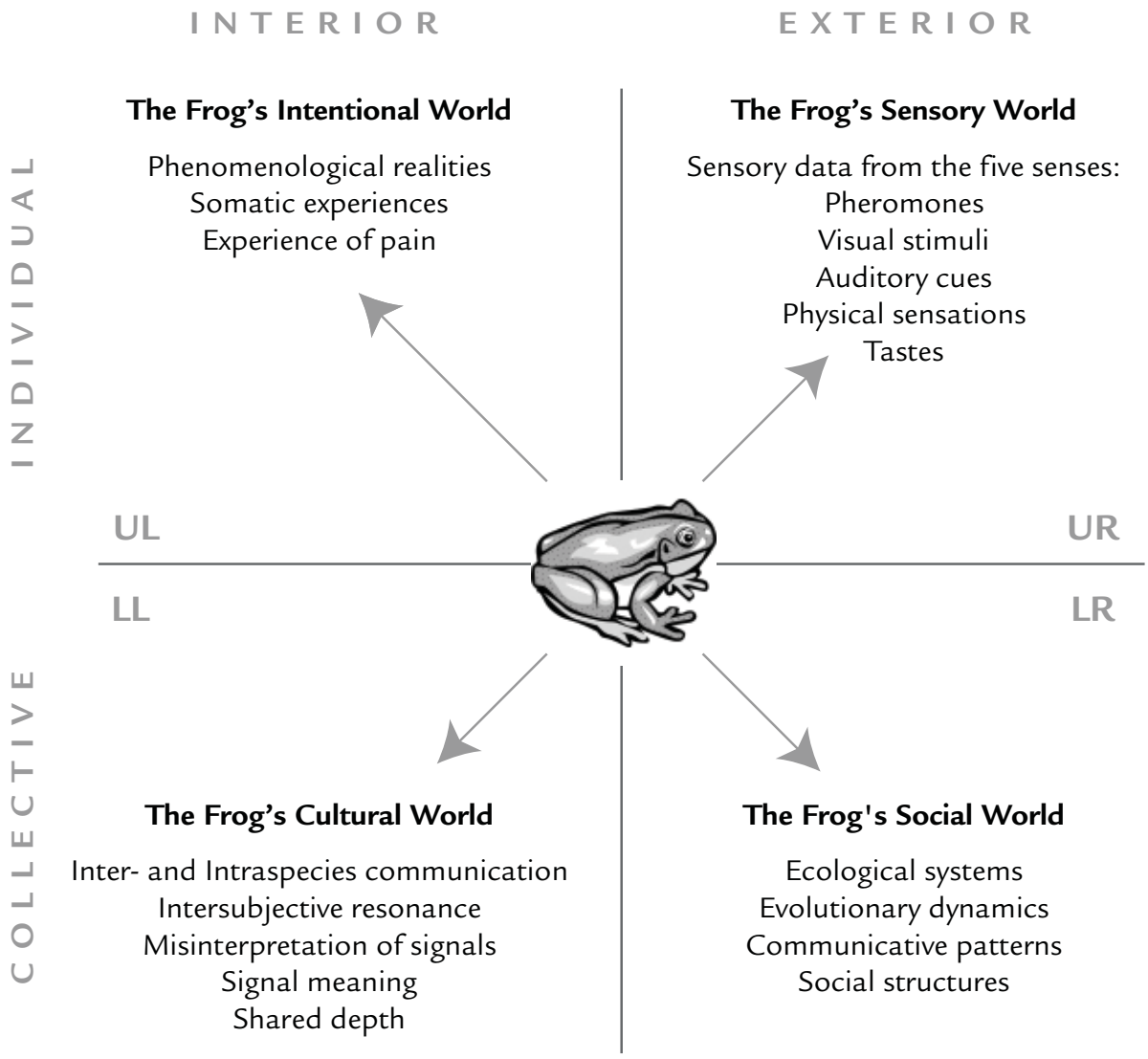

Figure 4. Four views of a frog.

The Frog's Cultural World

The terrain of culture includes the frog's communication and exchange of meaning with frogs and other animals such as snakes, birds, insects, mice, and foxes. When organisms communicate and interpret each other's signals (e.g., sounds and body language), they create a "semiotic niche," or an intersubjective space of meaning. Frogs, like all sentient beings, have a specific semiotic niche. This intersubjective space meshes or collides with the depth of meaning in other organisms. A frog that misunderstands the intentions of a roaming fox—jumping at the wrong moment—is likely to end up as dinner. Consequently, interpretation and misinterpretation of signals plays an important role in an organism's survival and reproductive success. In integral ecology we speak of the frog's "culture" as a general, intersubjective space between individual frogs. Frog "culture" includes all the ways frogs communicate meaning (vocalizations, pheromones, movement, visual display, touch). It also includes

the ways frogs interpret inorganic features and other animals within their world. We do not assume any degree of self-reflectivity on the part of frogs. But frogs do share an intersubjective space among themselves and with other organisms!

The Frog's Social World

The terrain of systems includes the various roles, patterns, and relationships that structure the behavior of frogs among themselves with regard to organisms and to the physical environment. The totality of social exchanges among frogs, with other organisms, and with the physical environment comprises an important aspect of the frog's ecological niche. In addition, there are various social structures and regulations that frogs adhere to that are informed by ecological pressures and evolutionary dynamics. These various systems comprise the frog's social world.

In short, a frog, like other organisms, has four distinct perspectives or lived worlds. So not only does an organism perceive its environment (a third-person perspective), but it also perceives others (a second-person perspective) and itself (a first-person perspective). Thus, in addition to a perceptual or sensory world (objective), an organism has an intentional world (subjective), a cultural world (intersubjective), and a social world (interobjective). As a result, in an integral ecology context, the classical definition of ecology (the study of the objectively ascertainable interrelationships between organisms and their environment) becomes the mixed methods (i.e., qualitative and quantitative) study of *the subjective and objective aspects of organisms in relationship to their intersubjective and interobjective environments*. Introducing subjective perspectives and intersubjective perspectives complicates matters, but provides a much richer understanding of ecological dynamics. The recognition and systematic inclusion of animal interiors is one of the features of integral ecology that sets it apart from other schools of ecology.

In addition to including animal interiors, integral ecology draws on many schools of ecological thought to include human interiors in a more comprehensive fashion than any other ecological approach. Integral ecology also examines the development of complexity in nature and the developmental capacity to take more perspectives in humans. In particular, integral ecology is interested in including how *nature* shows up to people operating from differing worldviews such as those informed by traditional, modern, and postmodern values. Integral ecology is also very interested in the movement of individual and collective identity from egocentric ("me") to ethnocentric ("my group") to sociocentric ("my country") to worldcentric ("all of us") to planetcentric ("all of us and our planet"). This developmental trajectory from ego- to planetcentric has many important implications for how we might better approach our complex planetary issues.

200+ Perspectives

As noted above, integral ecology acknowledges the importance of and defines the relationships among the many standard schools of ecology (e.g., behavioral ecology and population ecology). In addition, however, integral ecology also includes schools of ecology that study individual and collective interiority (e.g., psychoanalytic ecology and ethno-ecology). This expanded definition of ecology has allowed us to identify over 200 different varieties of ecological thought (including 80 schools of ecology) ranging from acoustic ecology to zoosemiotics. Each of these schools emphasize various positions within the four major terrains.[3] Figure 5 provides a sampling of forty of these schools and

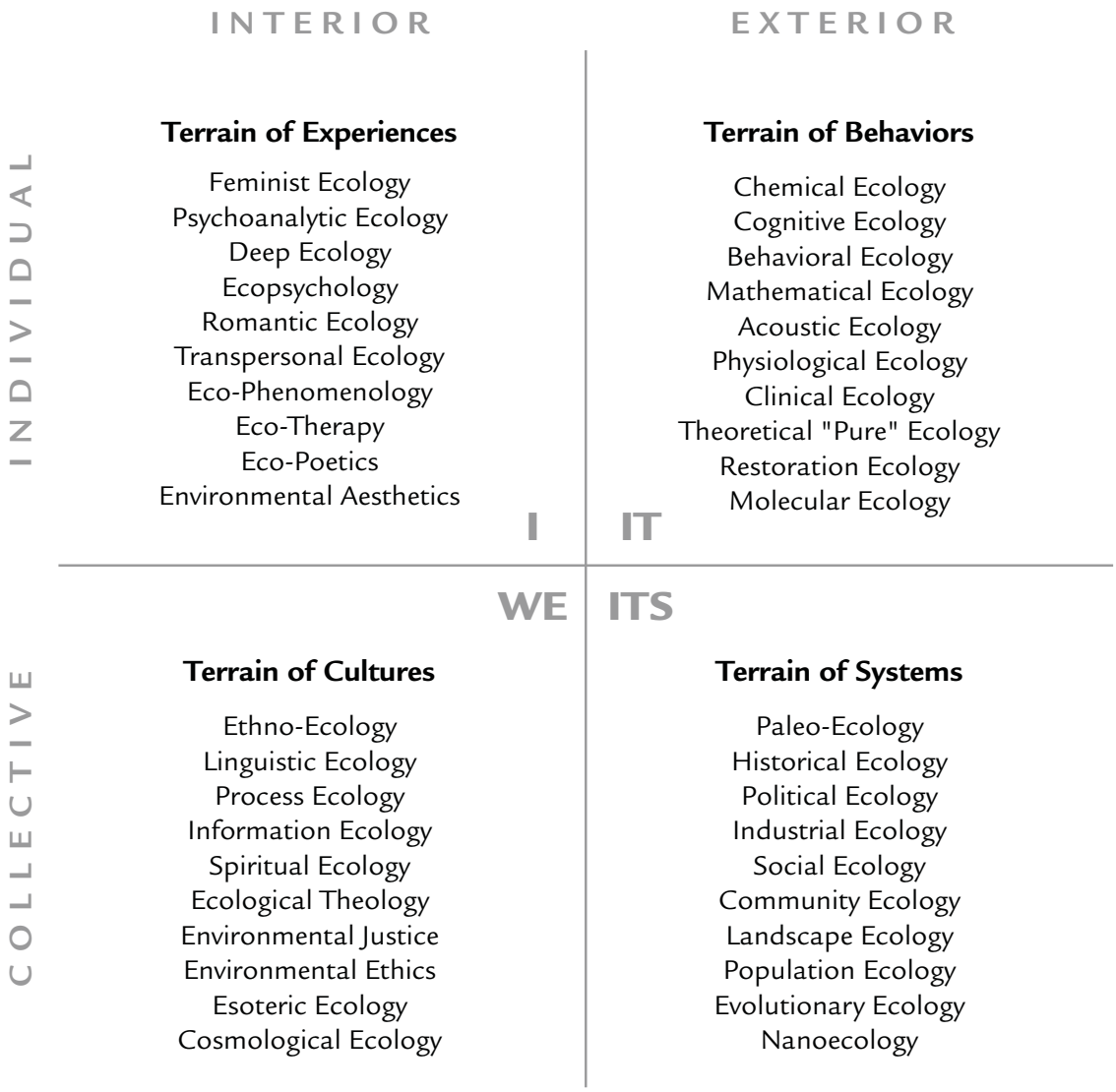

Figure 5. Some schools of ecology organized by the four terrains.

their potential placement within the four terrains. While some schools emphasize two or three terrains depending on the context or the expertise of a particular author, our point is simply that we need to include as many of these valid perspectives on nature as possible, especially when dealing with our more complex ecological problems.

In affirming the differences among, as well as the importance of, each of these major perspectives, integral ecology avoids various kinds of reductionism. For example, it avoids reducing psychological and cultural dimensions to simply objective behaviors or to complex interwoven systems. Subjective and intersubjective perspectives—including beliefs, psychological dynamics, values, cultural norms, religious traditions, and ethnic self-identification—must be included in characterizing environmental problems. Coordinating and assessing pertinent perspectives requires the use of multiple first-, sec-

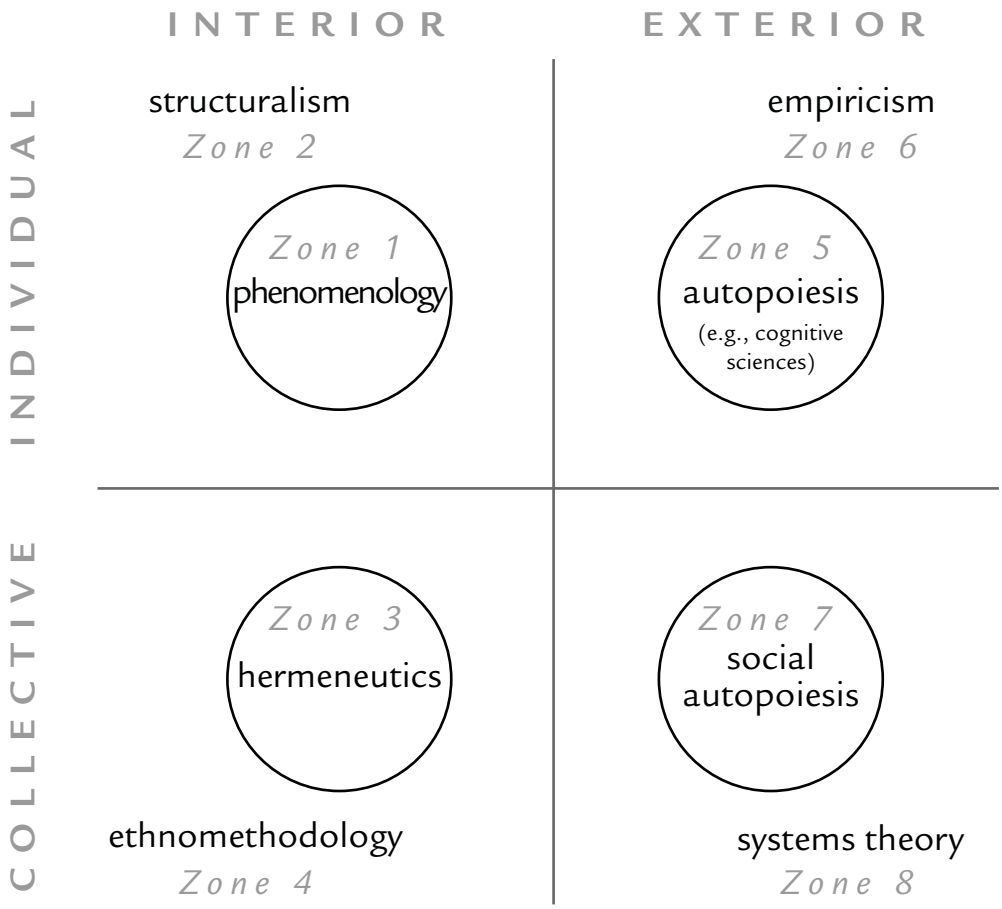

Figure 6. Eight methodological zones.

ond-, and third-person methods in an interrelated fashion. Integral ecology accomplishes this through *integral methodological pluralism*, which is to be contrasted with using one or a few methods of knowing reality or doing research according to one's own preferred view (e.g., drawing primarily on a particular school of ecology such as community ecology and its third-person techniques). With integral methodological pluralism, other perspectives that might be brought to bare on the problem at hand are also embraced (e.g., insights from eco-phenomenology with its first-person practices and environmental justice with its second-person processes).

Each of the perspectives associated with the four terrains can be studied through two major methodological families, namely from either the inside or the outside. This results in eight major methodological families (e.g., phenomenology) or zones associated with integral methodological pluralism (fig. 6). Integral methodological pluralism consists of three principles: *inclusion* (consult multiple perspectives and methods impartially), *enfoldment* (prioritize the importance of findings generated from these perspectives and their methods), and *enactment* (recognize that reality is revealed to individuals through their activity of knowing it). As a result of these three commitments, integral ecology emphasizes the dynamic quality of ecological realities as being enacted by an observer using a particular way of observing to observe a specific part of nature. In other words, ecological realities are

understood as a dynamic interaction between the *who*, *how*, and *what*. These three principles are what allow integral ecology to recognize and interrelate 200 distinct perspectives on nature.

Among the 200 perspectives on ecology and the natural world that we have identified, there are many approaches that specialize in using the methods, practices, and techniques associated with each of the eight zones. Consequently, an integral approach to ecology must include all eight zones or it inadvertently leaves out important aspects of reality that have a bearing on achieving effective ecological solutions to our planetary problems. In other words, the more of reality we acknowledge and include, the more sustainable our solutions will become, precisely because the project will respond to the complexity of that reality. We cannot exclude major dimensions of reality and expect comprehensive, sustainable results. Eventually those realities that have been excluded will demand recognition and incorporation as the design falters and is abandoned for more nuanced and comprehensive strategies. Hence the need for an integral approach.

After using integral methodological pluralism to develop a solution to a particular environmental problem, integral ecology practitioners must communicate that solution in ways consistent with the worldviews and values of a given audience. For example, extensive psycho-cultural research indicates that about 30%–40% of the adult population of the United States holds traditional values (e.g., conservative Christian), 30%–50% holds modern values (e.g., people committed to democratic individualism and science-oriented rationality), and 10%–30% hold postmodern values (e.g., environmentalists concerned with ending socio-cultural hierarchy and the domination of nature) (see the research by Willett Kempton and colleagues as well as the work of Paul Ray and Sherry Ruth Anderson). In fact, cross-cultural research indicates that these three kinds of values are found in many countries across the globe. Integral ecology sees how each of these different worldviews contributes towards environmental solutions, and representatives from all these perspectives need to be included in our efforts.

Conclusion

In summary, there are numerous approaches to the environment: philosophical, spiritual, religious, social, political, cultural, behavioral, scientific, and psychological. Each highlights an essential component, but too often remains silent concerning other important dimensions. To overcome this fragmentation, integral ecology provides a way of weaving all approaches into an environmental tapestry, an ecology of ecologies that honors not just the physical ecology of systems and behaviors, but includes the cultural and intentional aspects as well—at all levels of organization. Thus, integral ecology is the study of the four terrains of the natural world at different levels of complexity. In addition, integral ecology takes into account the multiple worldviews within individuals, communities, and cultures, and their accompanying environmental perspectives—each with its specific forms of mutual understanding. Furthermore, integral ecology highlights that the environment and its various aspects are revealed differently depending on the mode of inquiry or methodology used to investigate it. As a result, integral ecology identifies eight methodological families that need to be utilized, on their own terms, for comprehensive knowledge of any given ecological reality. In short, integral ecology recognizes that different approaches to ecology and the environment are the result of a spectrum of perspectives (“the who”) using a variety of methods (“the how”) to explore different aspects of the four terrains (“the what”).

Only by becoming increasingly aware of the who, how, and what of environmental issues can we truly integrate the multiple voices calling for a more just and ecologically friendly world. Only in such a world is there the capacity to generate sustainable solutions to complex multidimensional problems, and only in such a world are all the notes of nature's song sung. Integral ecology is committed to the complexity and multidimensionality of this world in its entire mysterious splendor. Integral ecology supports us in becoming increasingly reflective of *what* we are looking at, *who* we are as we are doing the looking, and *how* are we looking at it. By becoming deeply reflective individuals, we can hope to reach effectively across the divides that separate us, and foster mutual understanding in service of our blue-green planet.

People who use the integral ecology framework recognize that it is not enough to integrate ecosystems and social systems (e.g., economies, laws, education). Nor is it enough to also include objective realities (e.g., behavioral studies, laboratory testing, empirical analysis). Instead, what is needed is to integrate these interobjective and objective realities with subjective (e.g., psychology, art, phenomenology) and intersubjective (e.g., religion, ethics, philosophy) realities. In effect, integral ecology unites consciousness, culture, and nature in service of sustainability.

Integral ecology allows for a comprehensive understanding of how the many ecological approaches available can be united to inform and complement each other in a coherent way. This integral framework honors the multiplicity of ecological perspectives. It allows individuals to become proficient at identifying how various methods focus on specific ecological concerns, and from which perspective those concerns are being explored. Environmental issues today are so complex that anything less than an integral approach will deliver only temporary solutions at best and ineffective results at worst. What is needed is an ecology of perspectives—one that combines the insights, approaches, concerns, techniques, and methods from the 200 distinct perspectives of the natural world. Such a meta-approach can coordinate and organize the various ecological perspectives in a truthful, sincere, just, and functional way that avoids being just another perspective. It is our hope that integral ecology supports a new kind of ecology, one that is informed by the strengths of many approaches and methods, while at the same time exposing the limits and blind spots of any single approach. Integral ecology provides one of the most sophisticated applications and extensions of integral theory available today, and as such it serves as a template for any truly integral effort.

NOTES

[1] For additional examples, see the seven case studies edited by Sean in a special double issue of *World Futures* and the two dozen examples presented in chapter 11 of our book, *Integral Ecology: Uniting Multiple Perspectives on the Natural World* (2009).
[2] Ken Wilber has published over 20 books since 1977 (nearly 10,000 pages of content). Most of this content is found in his *Collected Works*. For an overview of Wilber's philosophy, see Frank Visser's book *Ken Wilber: Thought as Passion*.
[3] For a description of all 200 perspectives, see the appendix in our book, *Integral Ecology: Uniting Multiple Perspectives on the Natural World* (2009).

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