



Defending the Importance of the Holarchical-Developmental Scheme for Environmentalism

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According to the late ecologist, Stan Rowe, Ken Wilber's holarchical scheme confuses important issues in the part-whole relationships belonging to organisms and ecosystems, and Wilber's developmental ideas echo the anthropocentrism found in the work of many other modernists. In the process of articulating and defending Wilber's views, I argue that Rowe's alternative flirts with ecofascism, insofar as Rowe depicts human beings as mere "parts" of Gaia, which considers everything smaller than Gaia as functional units. Despite my disagreements with Rowe, I admire him for grappling with these important and highly complex issues.

Introduction

Integral Theory's proposal of calling on multiple perspectives and methods to characterize environmental problems is relatively uncontroversial in a time when people from many different environmental disciplines are calling for integrated approaches to characterizing and resolving environmental problems. Ken Wilber, the leading theorist of Integral Theory and the developer of the AQAL approach, however, has drawn sharp criticism from some environmentalists, including the late Stan Rowe, a well-known ecological scientist with a deep ecology perspective. A few years ago, in "Transcending this Poor Earth—á [sic] la Ken Wilber" (henceforth, TPE),¹ Rowe critically evaluates Wilber's book, *A Brief History of Everything* (henceforth, BHE).² Intended for a semi-popular audience, BHE provides an engaging but limited account of Integral Theory and its importance for environmental matters. Because it lacks academic apparatus such as footnotes and bibliography, the book should *not* provide the sole basis for forming a firm opinion about the merits of Integral Theory. Interested readers should consider Wilber's other



work, including *Sex, Ecology, Spirituality* (henceforth, SES)³ and his many online essays, which clarify and improve upon environmentally pertinent assertions made in SES and BHE.

Some of Rowe's criticisms are useful; others miss the point, while still others are undermined by the fact that Rowe himself defends a position very similar to that for which he calls Wilber to task. In the summary that he provides, however, Rowe demonstrates a working knowledge of Wilber's position. In what follows, I offer an extended rejoinder to Rowe's critical essay, not with the aim of scoring points against Rowe, but rather to provide a more accurate account of Wilber's Integral Theory. Such an account, I hope, may persuade interested environmentalists—including deep ecologists—that Wilber's work can make an important contribution to dealing with environmental problems. I do not uncritically adhere to all aspects of Wilber's developmental holarchy, which in some respects is a metaphysical position that cannot be fully confirmed by empirical evidence.⁴ Nevertheless, I believe that his holarchical and developmental views are very insightful and potentially integrative. Like many others, I have learned a great deal from Wilber's pioneering research. Continuing dialogue among serious thinkers will help to discern the limits and generate subsequent versions of Wilber's developmental holarchy.

In addition to three minor criticisms, which I briefly address, Rowe offers a major criticism. My response to that criticism takes up most of this essay. According to Rowe, Wilber extrapolates the hierarchical idea of the holon beyond its useful scope, thereby developing an illogical hierarchy or holarchy that reinforces anthropocentrism, to the detriment of the alleged "supra-organism," Planet Earth. Rowe is concerned that Wilber misunderstands the relation between parts and wholes in such a way that Wilber denies that humans are "parts" of the biosphere. As we will see, Wilber regards the issue of part-whole relations as crucial for understanding humanity's relation to physiosphere, biosphere, and noosphere—the complex logic of part-whole relations.



Three Brief Criticisms

Rowe begins by offering three brief criticisms of BHE.⁵ First, the book allegedly exhibits “faith in historical [progressive] determinism”; second, it has a tone of “defensive belligerence”; and third, it tends to lump deep ecologists, ecofeminists, and other such environmentalists into the camp of “retro-Romantics,” who are depicted as “unwitting foes of human advancement.”⁶ Wilber does subscribe to a progressive-evolutionary vision informed by social theorists such as Jürgen Habermas, but he is no naïve historical determinist. Wilber correctly believes that there is no pre-determined cosmic plan; indeed, humankind may well annihilate itself or at least destroy techno-industrial civilization by sufficiently perturbing the biosphere on which all life depends. Neither is Wilber a starry-eyed promoter of a progressive Promised Land. Indeed, he makes clear that every new level or stage of development not only resolves old problems, but also generates new dangers, new pathologies, and new problems. For millions of people, industrialization solved many problems—for instance, malnutrition and early death from infectious diseases. However, it also generated new problems—for instance, widespread social anomie and the capacity for truly vast anthropogenic destruction of the natural environment.

Such problems often arise because many people in *modern* societies adhere to *premodern* attitudes and beliefs. Instead of subscribing to worldcentric, Enlightenment norms about mutual respect and human rights, many people are overtly or covertly ethnocentric, not to mention strongly anthropocentric. The “founding fathers,” who embodied the Enlightenment universalism (with certain important exceptions!) codified in the U.S. Constitution, represented a minority position in colonial America. Even today, suspicious of the libertarian norms enshrined in the Constitution, millions of Americans are willing to abandon constitutional liberties.

Adhering to liberal political norms is *not* a prerequisite for using modern technology, as Nazi Germany demonstrated and as today’s sophisticated white supremacist websites show. Although industrial technology has often been used for exploiting the natural environment and dominating



human beings, modern democracies have avoided making war on one another. If the vast majority of human societies were to adopt some representational form of government with guarantees for basic human rights, warfare and militarism would quite possibly diminish considerably. I believe that Wilber is correct in affirming that genuine progress is to be measured not by industrial capacity, but rather by interior development that allows people to take the position of the “Other.” Progress is indeed a myth if it amounts to techno-industrial control without *corresponding adherence* by individuals and cultures to modern norms of liberty for all.

Moreover, Wilber asserts that human development—individual, social, and cultural—includes an invariant sequence of waves or stages. For example, in the movement from conventional to postconventional moral attitudes, humans adopt and grant to others more justice and care. Individuals also contain many developmental *lines* (cognitive, moral, aesthetic, interpersonal, and so on). Hence, someone who is highly developed cognitively might be stunted in the psychosexual domain. At times, BHE does sound neo-Platonic insofar as Wilber indicates that ancient mystics discovered apparently pre-existing “higher” stages of consciousness. Wilber has also previously endorsed the perennial philosophy’s notion of the Great Chain of Being as a cosmic hierarchy, the levels of which are *a priori* realms of reality.

Wilber has long since replaced the notion of the Great Chain of Being with the “Great Nest of Being.” He has also abandoned the notion that human development is somehow prefigured or laid out in advance. He has more recently defined developmental history according to Charles Peirce’s claim that natural laws can best be understood as cosmic habits. Rather than pre-ordained structures of reality, natural laws are behaviors that at one moment emerged spontaneously but became increasingly fixed (some became habits very rapidly in the initial moments following the Big Bang, while others became habits more slowly in social developments billions of years later). As acquired habits, the laws of nature could have been



other than they are, and there remains some room for variance even in strongly fixed laws or habits.

Applying this notion to human development, Wilber concludes that such development could have turned out differently and might be different than currently predicted. What social development theorists do best is retrodiction: that is, examining social history to see what kind of development actually took place, and then attempting to explain how and why it occurred. Wilber hypothesizes that ancient hunter-gatherer tribal societies organized themselves as they did *not* because they were instantiating some neo-Platonic form, but rather because such organization proved effective given the life circumstances in which early hominids found themselves. Tribal behavior and consciousness are habits at which humans eventually became very good. Habits constitute morphogenetic fields that make it easier for subsequent generations to accomplish something that was more difficult for earlier generations.⁷

Socio-cultural development—which is frequently depicted as progressing through stages such as hunter-gatherer, horticultural, agricultural, industrial, and informational—is not analogous to the developmental stages of an organism, although this is how influential thinkers such as Hegel and Marx interpreted such stages: as the actualization of built-in human potential. Like Plato and Whitehead, Wilber emphasizes the role played by Eros in development. Wholeness acts as a kind of erotic lure that draws Kosmic constituents into ever more complex forms and relationships. How such wholeness manifests is underdetermined, except that it has to somehow include past expressions of wholeness. Each new wave or development is an attempt to respond via greater wholeness or integration to the partiality of the previous wave, which itself was responding to previous partiality. Evolution is a process of transcending (Eros) and including (Agape). Wilber uses the term Agape to describe this dynamic of embracing the wholeness at each level of complexity.



Major socio-cultural transformations are frequently linked to unanticipated and far-reaching technical innovations, which required humans to redefine themselves not only economically and socially but also individually and culturally. For instance, machine technology limited the physical advantages that evolution conferred upon men, thereby making it possible for women to compete for many jobs that had once inevitably been reserved for men. Hence, it was not an accident that the rise of feminism coincided with the Industrial Revolution. When repeated sufficiently, initially halting redefinitions of behavior became habitual and taken for granted, almost as if they were “pre-determined.” But they simply became “Kosmic habits.”

Turning to Rowe’s second brief criticism, I agree that BHE occasionally exhibits a belligerent tone, for which I have criticized Wilber.⁸ BHE and SES alike would have possibly had even greater influence had they exhibited a different rhetorical strategy. Still, I think that some people inflate this issue beyond its pertinence. Rowe himself notes that Wilber toned down his polemic in the second edition of BHE (as well as in the second edition of SES). I am puzzled as to why in his own essay Rowe himself adopts the same belligerent tone for which he criticizes BHE. For instance, at one point Rowe refers to “Wilber’s by-guess-and-by-God evolutionary scheme.”⁹ Perhaps he decided to give Wilber a dose of his own medicine, but something else may have been at work. Perhaps Rowe was stung by the fact that his position has so much in common with Wilber, despite important differences. In lashing out, perhaps Rowe wanted to distinguish the ways in which he disagreed with Wilber.

I also concur with aspects of Rowe’s third brief criticism, namely, that Wilber depicts all deep ecologists and ecofeminists with too broad a brush, and at times too dismissively as retro-Romantics. Wilber’s brush is only slightly more refined when he uses it to depict these groups in his more substantial tome, SES. The leading American ecofeminist, Karen J. Warren, for example, has developed integral views that have much in common with those of Wilber. Moreover, Arne Naess can scarcely be regarded as a retro-Romantic. Despite some rhetorical



excess, however, there is an important kernel of truth to BHE's startling claim that many members of the "Eco-camp" (environmentalists) share with members of the "Ego-camp" (modernists) a one-dimensional, flatland, or industrial ontology, according to which reality is equivalent to the totality of material phenomena. The "interconnections" of scientific ecology are external-mechanical phenomena that many Eco-campers attempt to equate with interior connectedness. The personal *feeling* of interconnectedness is by no means identical with the industrial map or grid of interconnectedness. Interior and exterior domains have correlations but must not be collapsed into one another.

Wilber argues that many environmentalists share with modernists a revulsion against the otherworldly Ascent tradition, which in the West predominated during the Middle Ages and which tended to denigrate the material world. Modernists and Romantics alike affirmed that only this world, the material world revealed by the senses, is truly real. To be sure, Western modernism started out with a dualistic ontology—mind that knows material nature is essentially different from nature. But increasingly, modernism committed itself to a materialist account of the world. Unable to account adequately for the place of consciousness, many of those following modernism's limited philosophy ended up dissociating themselves as rational subjects from the material world, which they then exploited ruthlessly and in a potentially suicidal manner, using the powers of industrial technology.

Romanticism emerged in part as a revolt against the hyper-rationalism, alienation, and nature-destruction associated with the Industrial Revolution, which was a prime instantiation of the modernist version of Descent. The mode of Descent adopted by many Romantics, however, was not to dissociate from and to dominate material nature (regarded by them as the only dimension of reality) but rather was to identify with and embrace nature. Wilber argues that, like modernism, such an embrace of nature not only failed to account for human interiority but also involved the regression to earlier stages of emotional/cognitive development and thus narcissism.



Eager to deny that the cosmos contains transcendent dimensions, modernists and Romantics ended up *mutatis mutandi*, or sharing the same one-dimensional ontology. In BHE's dialogue format, we read:

KW: Thus, only in the wake of Descended modernity could you have a Marx, a Feuerbach, a Comte. But likewise, only in the wake of modernity could you have the fully developed nature Romantics and ecophilosophers. They are all working the same side of the street, the same flatland, and finding their god, such as it is, in the Descended world of sensory nature, held secretly in place by the industrial grid....

Q: So this means that the Eco-Romantic movement is not a rebellion against industry but a product of industry?

KW: In many ways, yes. The belief that empirical nature is the ultimate reality—that *is* the industrial ontology. The Eco-Romantics rejected the industry but kept the ontology, and did so in the most loyal fashion. In other words, they rejected the superficial problem while embracing the deeper disaster.... The religion of Gaia, the worship of nature, is simply one of the main forms of industrial religion, of industrial spirituality, and it perpetuates that industrial paradigm.¹⁰

One can readily understand why many environmentalists, including Rowe, would be angered by Wilber's contention that their pro-nature stance shares its ontological foundations with those of nature-assaulting modernity! BHE and SES further contend that systems theory also shares the presuppositions of modern ontology. Some environmentalists claim that systems theory can reunite the world split asunder by the atomistic worldview of modern science. As historians of science have demonstrated, however, moderns embraced early on the idea that the cosmos is



constituted as an enormously complex, interactive, material-mechanical system, often known as the Clockwork Universe. The science of ecology was conceived of and remains tied to the systemic concept of the “economy” of nature. Although systems theory is enormously important, it remains an aspect of industrial ontology; systems theory cannot account for interiority, consciousness, or awareness.¹¹ According to Wilber, systems theory says nothing about ethical standards, intersubjective values, moral dispositions, mutual understanding, truthfulness, sincerity, depth, integrity, aesthetics, interpretation, hermeneutics, beauty, art, or the sublime. All you find are their objective and exterior correlates. You find in systems theory only information bits scurrying through processing channels; cybernetic feedback loops; processes within processes of dynamic networks of monological representations; and nests within nests of endless processes, all of which have *simple location*, not in an individual, but in the social system and network of objective processes.¹²

Systems theory is a form of modernism, which operates according to the representational or mapping paradigm, criticism of which is central to postmodernism. According to modernists and many environmentalists, people generate knowledge by a process of mirroring and mapping. Mind opens itself to material reality, which is then reflected upon (that is, *re-presented* on) the mental mirror. Knowledge involves drawing maps or representations of the pre-existing reality mirrored in the mind. Insufficiently accounted for, if not entirely left out of this account of mapping, is the mapmaker. Postmoderns assert that knowing is always a process of *interpreting*, not of “pure” mapping. Those mapping are always situated, finite, and limited; they occupy perspectives or frameworks where some aspects of phenomena can show themselves, but other aspects cannot. Aspects of phenomena appear and can be cognized, but always within limits consistent with the knowledge-generating methods used by the “mappers.” Reality is so complex that multiple perspectives are required for accuracy. Indeed, even data-driven cognition often generates “systems” or “things” whose ontological status is heavily dependent on the cognitive process. Wilber argues that these first efforts at systems theory have the virtue of overcoming



subject-object dualism, but at the heavy price of reducing all subjects to objects in the “holistic” system. The systems view may be depicted as “very holistic and all-inclusive,” but in fact it “guts the interiors of the entire Kosmos” by eliminating the “lifeworld of all holons.”¹³ Hence, systems theory is a form of “subtle reductionism.”

Adhering to this same reflection of subtle reductionism at work in systems theory, Rowe accuses Wilber of “transcending this poor Earth”; that is, of resurrecting long and well-dead otherworldly attitudes that have been partly responsible for despising and thus inviting exploitation of the material world. In BHE and elsewhere, however, Wilber clearly distinguishes between two kinds of transcendence. The first kind is the “mythic form of dissociative ‘transcendence,’ (which indeed is earth-denying).”¹⁴ Wilber completely agrees with Rowe that yearning for such transcendence is not only misguided but has also historically invited and justified human mistreatment of the world on which life depends.

The second kind of transcendence, which Wilber affirms and which he claims that Descenders (modern and Romantic) exclude, “is simply the form of interior development and evolution of consciousness—which is the actual path of earth-saving!”¹⁵ Wilber contends that development of human interiority—both individual and cultural—is a crucial factor in curbing current mistreatment of the natural world. Much environmental destruction results not because people have mean-spirited attitudes toward nature, but rather because people fail to treat one another with mutual respect and understanding, which is a prerequisite for embracing nature as a living system. Military expenditures and warfare, which are directly related to mutual suspicion and hatred, wreak enormous environmental havoc. Likewise, lack of appreciation of and respect for people other than one’s own ethnic or nationalistic identity invites large corporations operating in the developing world to engage in socially and environmentally destructive practices. Changing such practices will certainly require instituting different social and economic systems, but more will be required. Individual attitudes and cultural mores must also evolve in ways that



are increasingly worldcentric, instead of being ethno- or sociocentric. Caribbean-born Maureen Silos argues that without such interior evolution, developing-world peoples will be unable to define their own developmental pathways and will instead continue to pursue some version of the modernist program that is deeply problematic socially, culturally, and environmentally. Social scientists assume that externally imposed systemic change will do the job, but Silos argues that long-term, significant change cannot occur without simultaneous change in the interior domains of individuals and cultures.¹⁶

By failing to make the crucial distinction between transcendence as interior development (personal growth, moral maturity, increasing depth of intersubjectivity) and transcendence as otherworldly flight, many environmentalists agree with those retro-Romantics who claim “Transcendence is the beginning of all evil!”¹⁷ Such Romantics “confuse transcendence and repression; they confuse differentiation with dissociation; they confuse actualization hierarchies with dominator hierarchies. Not transcendence! Just get closer to nature—closer to the Descended grid—precisely the cause of the problem, not the cure.”¹⁸ Hence, some (not all!) deep ecologists tend to regard modern civilization as a grave error when compared with the ways and mores of ancient gatherer-hunters. Rousseau’s celebration of the noble savage, the naïve and innocent “natural” man who is allegedly corrupted by civilization, is repeated subtly and not so subtly by environmentalists who are revolted (often rightly so!) by how modern humans often treat the non-human world on which human life depends. Human mistreatment of the biosphere has social and cultural causes that can be addressed not by returning to premodern social formations but rather only in turning away from ethnocentrism and moving toward genuine mutual respect and understanding. Eventually, more and more people will demonstrate such respect and understanding for non-human beings as well as for humans. These complex issues require discussion from many perspectives, and Wilber’s thoughtful observations merit respectful consideration and criticism, not pejorative dismissal.



Rowe's Major Critique: Wilber's Illogical Holarchy

Rowe maintains that his act of unscrambling Wilber's interpretation of Arthur Koestler's holons "makes non-sense of much of Wilber's [allegedly] neo-Platonic scheme."¹⁹ ²⁰ Rowe reviews Koestler's concept of holons, about which he and Wilber agree in many respects. According to Koestler, reality is composed of hierarchical levels, each of which has its own structural uniformities that cannot be reduced to structures of lower-level phenomena. In *The Ghost in the Machine*, Koestler argued that holons have three different dimensions: first, it is a whole in its own right; second, it is composed of parts whose behavior is significantly subordinated to those of the holon in question; third, the holon is a part of and is, to some extent, controlled by a more embracing or inclusive whole—that is, a holon at the next hierarchical level.²¹ Rowe notes that the holon is Janus-faced: "it is a part to its whole to its parts below, and it is a part to the whole above. Reality consists of relational holons, not separate 'things.' The concept, a good one, dissolves the antagonism in science between reductionism and holism, for reductionism is a way of understanding that which moves downward in hierarchies while holism is the upward view."²²

Koestler developed a pyramidal model of cosmic hierarchy, with vast numbers of holons (subatomic particles) at the bottom level, while each succeeding higher level (with a progressively greater level of complexity)—atoms, molecules, organelles, cells, tissues, organs, organ system, and the organism—has fewer instances. Although affirming the usefulness of this nested hierarchy model for describing the hierarchical structure of the organism, Rowe—like a number of other critics—contends that Koestler pushed the model beyond its proper limits, by accepting it "as the template for organic development and evolution, for animal locomotion and behavior, for linguistics, and for human societies past and present."²³ Even though the anatomical structure of an organism is sometimes a helpful analogy for understanding other systems, Rowe maintains that "organisms are not homologous with all existing systems."²⁴ Rowe contends that Wilber accepted "Koestler's grab-bag of holons and hierarchies." Wilber writes: "All things and processes, symbols, images and concepts are holons. It's holons all the way down and all the



way up.”²⁵ Rowe contends that Wilber’s “illogic” tempts him to “link non-homologous hierarchies” and to “uncritically accept as legitimate for all holarchies” the rules that fit only one kind of holarchy.²⁶

Rowe concedes that notable scientists, such as Allen and Starr in *Hierarchy: Perspectives for Ecological Complexity*, also “prefer to generalize the meaning of holons to include entities of any type” and justify this move by saying that the common denominator of all holons is information.²⁷ Rowe maintains, however, that the *spatial* arrangement of an organism’s nested hierarchy of levels is not applicable in attempts to explain the *temporal* development of an organism. Koestler glided too quickly over the difference between structures (spatial) and processes (temporal). Informationally-triggered feedback occurs within organisms, but it cannot occur in temporal sequences such as organic development. Hence, an adult organism cannot influence its own initial stage of development.²⁸ Rowe’s point here deserves consideration. Nevertheless, even though the development of a normal phenotype is dynamic/temporal rather than spatial, the sequential unfolding that occurs in normal development of a phenotype—which is a holon—embraces a host of junior holons, including atoms, molecules, organelles, and cells. Moreover, Wilber would emphasize that organisms as such evolved in a hierarchical sequence. Organisms constitute an emergent level of organization, the properties of which differ significantly from those that characterize non-living phenomena, such as atoms and molecules.

In discussing James K. Feibleman’s “laws of the levels,” which anticipated Koestler’s book by more than a decade, Rowe mentions other problems posed by generalizing organic (nested) hierarchy beyond their appropriate application.²⁹ For instance, with regard to Feibleman’s first law, “Each level organizes the one below it plus one emergent quality,” Rowe maintains that it applies to the nested hierarchy constituting organisms, but writes that “the idea gets hazy when applied to sociological groupings such as family, tribe, ethnic group, societies with division of labor, and nation....”³⁰ As we shall see, Wilber shares such concerns. According to Rowe’s



restatement of Feibleman's fourth law, each organic level has some autonomy but is also an integral part of and thus constrained by the higher level.

The integrative tendency of each holon must overrule its self-assertive tendency if the whole organism is to maintain its health. Such a law is irrelevant to evolutionary sequences because it overrides the self-assertive tendency. Yet this type of thinking is dangerous when applied to sociological systems, for it can be used, as Medawar foresaw, to justify subjugation of the individual to the totalitarian state.³¹ Wilber completely agrees with Rowe on this point. Strangely, however, Rowe ultimately invites such totalitarianism by defining human beings as subservient parts of the supra-organism, Earth, which is held as more valuable than humans.

Rowe writes that the fifth law, "For an organization at any level, its mechanism lies at the level below and its purpose at the level above," is valid for the organic hierarchy but "makes little sense for developmental, evolutionary, sociological, cultural, and mental systems."³² Rowe agrees that Feibleman's law number eight, "The higher the level, the smaller its population of instances," applies to "hierarchies that aggregate upwards, as well as for [most] ecological food pyramids," but it is dangerous when applied to cultural evolution "because, for example, it justifies the hegemony of the Western industrial/agricultural system. The fact that the Western cultural system has few variants (small population of instances)...does not automatically confer the title 'higher' unless, like Marx and Wilber, one believes in laws of historical necessity."³³ Later, Rowe notes that Wilber (like many other thinkers) ascribes to evolution a drift—even a kind of entelechy—leading toward ever-greater complexity. Rowe states that Wilber's "sequences are based on a theory of progress onward and upward, like the Marxist faith that historical necessity guides the transition from feudalism to capitalism to communism."³⁴

Rowe offers no quotation from BHE to support this analogy between Wilber and Marx, because no such quotation exists. Wilber does not adhere to historical determinism. Although influenced by Hegel and Marx, Wilber insists that there is nothing necessary about human social evolution,



any more than there is necessity at work in organic evolution.³⁵ Hegel remarked that the owl of Minerva paints its grey on grey only at the end of things, that is, wisdom takes flight retrospectively. Looking back over the course of organic evolution, thinkers of many different stripes claim to discern in it a move toward greater complexity, despite many meanderings, tangents, and setbacks. Jürgen Habermas, to whose research Wilber frequently appeals, argues that in certain respects Western forms of consciousness, rationality, and social systems are more inclusive and comprehensive. In those respects, they are more “advanced” than those of other societies. That Western countries have sometimes failed to acknowledge and respect the interests of non-Western peoples (not to mention non-human life forms) is no argument against the validity of the principled worldcentric position to which Western democracies theoretically adhere.

Some critics charge that in domains such as community, cultural cohesiveness, and individual meaningfulness, Western social systems may compare unfavorably with some premodern systems.³⁶ Such charges must be evaluated carefully on a case-by-case basis. Consider the enormous scope of “meaningfulness” and “relationship” available to many 21st century individuals. Moreover, many premodern societies included practices and attitudes that a very large percentage of modern people would find deeply problematic. Indeed, the very activity of comparing and evaluating many different cultures presupposes a cognitive perspective and conceptual resources available to very few individuals in premodern societies, which are unapologetically ethnocentric.

Wilber does emphasize that individuals, cultures, and societies contain many different lines of development, and every person, culture, and society is somewhat different. (For example, individual persons have different experiential backgrounds, memories, beliefs, attitudes, emotional valences, aspirations, psychosexual capacities, and values; cultures have different worldviews, intersubjective linguistic semantics, values, and cultural contexts; social systems



have different forces of production, geopolitical structures, written legal codes, modes of transportation, and communication technologies; organisms have different organic structures, neuronal systems, brainwave patterns, and skeletal-muscular development.) Hence, there is no “one” Western system but many such systems that have what Wittgenstein would call a “family resemblance” to one another. David S. Owens has recently remarked that Habermas conceives the rationalization process of social evolution “as progressive changes in structures of consciousness which determine the range of possible variations a society can embody. Thus, the institutions of two empirical societies may appear significantly different, while they are both conditioned by the same deep structure of consciousness.”³⁷

At this point, Rowe offers a helpful summary of BHE, except for the glaring exception of his point number nine, “Holons evolve in complexity by dissociating their four dimensions and then, by progressive transcendence, reuniting them in a higher synthesis where new qualities emerge.”³⁸ In fact, Wilber asserts that holons develop *simultaneously* in all quadrants: 1) “I”—interior individual; 2) “We/You”—interior collective; 3) “It”—exterior individual; and 4) “Its”—exterior collective. Because holons “tetra-evolve,” Wilber never stated and would never state that holons evolve by dissociating themselves. Evidently, Rowe assumed that Wilber’s statements about the dissociation of the value spheres that occurred in Enlightenment modernity (and the need to overcome said dissociation) somehow applies to holonic evolution in general.

Rowe correctly notes that Wilber’s key law is that “each emergent holon transcends but includes its predecessors, and evolution is a process of transcend and include.”³⁹ According to Wilber, planetary evolution moves from physiosphere (material domain) to biosphere (organic domain, including biosphere and organisms) to noosphere (“the domain of conscious mind” in individual organisms and their corresponding cultures) to theosphere (spiritual domain).⁴⁰ Regarding each of these domains as holons, Wilber claims that just as the biosphere transcends and includes the physiosphere, so too the noosphere transcends and includes the biosphere. Rowe then quotes and



misinterprets one of the most misunderstood passages from BHE: “the biosphere is literally internal to us, is part of our being.”⁴¹ “Such arguments,” writes Rowe, “assume the same kind of structural organization in physical, biological, and mental categories.” This is a curious assertion, especially insofar as Wilber goes to great pains to point out the dramatic differences among the “structural organization” of each quadrant of the physiosphere, biosphere, and noosphere (I leave a discussion of the theosphere for another day!). Physical location is basic to phenomena in the physiosphere. The noosphere, however, *cannot* be characterized as having physical (simple) location. If Rowe’s point is that “transcend and include” is common to all three spheres, and that surely is Wilber’s point, then Rowe needs to provide a more satisfactory account for why this very general structure does not apply to terrestrial development.

Rowe asserts that the above-mentioned, allegedly false structural homology, “when teamed up with [Wilber’s] Platonic philosophy, provide the bootstraps by which Wilber’s system lifts all reality into aspects of consciousness on their way to pure Spirit.”⁴² Here, Rowe’s essay—which hitherto had raised some reasonable reservations about Wilber’s position—develops serious problems. First of all, by Platonism, does Rowe have in mind an essentialist, ahistorical, eternalist metaphysics, the kind of which nineteenth century evolutionary theorists had to overcome in order to defend their claim that species evolved, rather than being on-going instantiations of archetypal forms that exist in the mind of God? Even an uncharitable reader of BHE would be hard pressed to impose this view on Wilber! Does Rowe have in mind the life-despising, world-negating philosophy that characterizes some versions of Christian neo-Platonism? Wilber, however, insists that such world-negation does not characterize the work of Plato or that of his greatest follower, Plotinus, who castigated the Gnostics precisely because they showed such contempt for material nature. Certainly, Wilber himself does not adhere to *contemptus mundi*, although he does not hesitate to point out how much suffering characterizes existence in the manifest realm, that is, the material-physical realm immediately evident to the senses. Time and again in BHE and SES, Wilber emphasizes that human behavior often wrecks



havoc on the biosphere. Indeed, concern about the potentially disastrous outcome of modern humankind's treatment of the biosphere is one reason that Wilber wrote *Sex, Ecology, Spirituality*.

If we examine Rowe's contention that Wilber's system lifts reality into consciousness, Rowe's definition of "Platonism" becomes clearer. To explain this contention, Rowe remarks that "the grain of truth" in Wilber's "dogma" is that all "organisms are 'open systems' constantly internalizing energy and materials from the biosphere..."⁴³ The reader is left to her own devices to understand precisely how this comment pertains to Wilber's claim that the biosphere transcends and includes the physiosphere. Rowe goes on to say, "...the conclusion that such common-sense phenomena as the physiosphere and biosphere—the Earth realities of air-water-landscapes in which humans live, move, and have their being—are interior, structural parts of the mind-noosphere can only ring true for dedicated idealists."⁴⁴ Nowhere does Wilber make such an outlandish claim. Rowe's reference to "dedicated idealists" may shed light on his intentions when describing Wilber as adhering to Platonism. Plato does not adhere to such subjective (or anthropocentric) idealism any more than Wilber. Rivers and landscapes are not inside and reducible to the human mind. The Mississippi River is not literally the "stream of thought," nor is Mount Everest a figment of the collective (and delusional) human imagination. In saying "the biosphere is literally internal to us, is part of our being," Wilber says something very different than Rowe thinks.

Wilber on Parts, Wholes, and Containment

To understand Wilber's position, let's step down in the hierarchy and ask how we are to understand Wilber's striking contention that the physiosphere is literally contained in every member of the biosphere. Surely, a single mouse cannot contain the Earth's crust, oceans, and atmosphere! In SES, Wilber says that all physiosphere holons depend for their existence on intricate networks of interrelationships with all other holons in their environment. Physiosphere



holons exist in intricate networks of relational exchange with holons at the same level of structural organization (tenet 11). As a very simplified model for depicting the relation between physiosphere and biosphere holons, Wilber speaks of the former holons as black checkers and the latter holons as red checkers. The second level (red, biospheric) checkers add a new dimension to a cosmos previously constituted by first-level (black, physiosphere) checkers. Wilber states that level two holons embrace level one holons and then go beyond them.

Since the red-and-black checker depends for its existence on its own component black checkers, and since the black checkers themselves depend ultimately for their particular type of existence on all the other black checkers in their universe, then any level 2 holon in essence embraces all of its level 1 world by simple virtue of its own compound individuality.⁴⁵

Because all physiosphere holons are wholly interrelated, a given organism contains the whole physiosphere since that organism contains matter from the physiosphere. It is a systemic and functional application and understanding of the word “include.”

Now, let's return to the challenging notion that the biosphere is a “part” of the noosphere. The biosphere is a part of us in the sense that humans are at least in one respect organic beings constituted by living flesh and blood. Organic life is wholly interrelated. Organic terrestrial kinship is discernible in shared DNA and has reinforced itself over hundreds of millions of years of intertwined developmental processes. Humans are not only organic beings, however. Humans are also noospheric beings. To represent this fact, another layer of checkers must be added to the black and red ones. The noosphere transcends the biosphere in the sense that consciousness (including animal consciousness) involves emergent properties that cannot be reduced to physiospheric or biospheric properties. Insofar as a human being is an organic being and thus includes organic tissue, the human being contains as a part of itself the whole of terrestrial life, because all life is interrelated. Without the biosphere, the noosphere would not have emerged in



the first place. Were the biosphere to vanish today, so would the noosphere, because biosphere is the foundation for noosphere. If you destroy all molecules, you destroy everything above that level, including cells, organisms, and ecosystems (i.e., the entire biosphere); but molecules and atoms, along with their social holons such as stars and planets, remain unscathed.

Far from being an “idealist” in the derogatory sense that Rowe has in mind, Wilber agrees with Rowe and so many other scientists that conscious reality (noosphere) depends upon the physical and organic domains, even though noosphere cannot be wholly explained in terms of those other two domains. There is no furtive “idealism” here, nor any attempt to reduce physical and organic phenomena to mental states. Indeed, Wilber underscores that he is not such an idealist when he asserts time and again that to understand any phenomenon, it must be examined from the perspectives offered by all four quadrants. Rowe himself concedes that Wilber’s multi-perspectival approach “is a valuable contribution. It identifies as ‘narrow’ those prophets and problem-solvers who claim ‘my way only’ as they charge off in one of the four directions.”⁴⁶ Wilber would certainly seem to agree with Rowe when he says: “The popular thesis that only self-improvement (self-realization, self-development, spiritual growth) will change the world, is one quarter right.”⁴⁷

Rowe is hardly alone in contesting Wilber’s striking claim that the noosphere (including humankind) is not part of the biosphere; instead, the biosphere is part of the noosphere. Wilber contends that the evolutionary process of transcend and include, unfold and enfold, generates emergent phenomena. “Each [such] emergence is a decentering, a transcendence, that finds more of the ‘external world’ to actually be ‘internal,’ or part of its very being.”⁴⁸ Wilber claims that this theoretical point is confirmed phenomenologically by nature mystics, including Emerson, who realize that

nature is a part of you, literally internal to your being. You are not a part of nature, nature is a part of you. And for just that reason, you treat nature as you



would treat your lungs or your kidneys. A spontaneous environmental ethics surges forth from your heart, and you will never again look at a river, a leaf, a deer, a robin, in the same way. This sounds very weird and far out—until you have that experience. You might ask the Apollo astronauts about it.⁴⁹

By “nature” in the above passage, Wilber means the physiosphere and biosphere that provide the foundation needed for the emergence of noosphere, which is shared by many mammals and is particularly well-developed in humans. Some additional discussion may help to clarify the issue here. According to Wilber’s holarchy, simpler holons are more numerous: they have *greater span* (and are thus *more fundamental*), but have *less depth* (and thus have *less significance*). There are countless atoms in the universe, but far fewer molecules, vastly fewer organic beings, and vastly fewer beings with some representational mental capacity. Simpler or junior holons are crucial because they are foundational; they provide the parts for the more complex beings that emerge in developmental processes. Take away the physiosphere, that is, atoms and inorganic molecules, and the biosphere collapses. Why? Because the physiosphere is part of the biosphere: the biosphere is composed of atoms and molecules. When living cells and the biosphere (individual holons and their corresponding social holons) emerged, they transcended the limits of atoms and inorganic molecules and brought forth an entirely new and unexpected domain of reality. Cells transcended, but included (as parts of themselves) atoms and inorganic molecules. Organic beings are not only physically more complex (indeed, a single living cell is as complex as a small city!), they also have far greater interior capacity.

For something to have greater depth means for it to be more complex, not only in terms of its exterior dimension—the focus of scientific investigation—but also in terms of its interior dimensions. The worldspace of an animal—that is, the horizon or opening within which phenomena can arise for it—is far greater than that of a plant, but a plant’s worldspace is vastly greater than that of a molecule. Noosphere as such emerges when the organism’s interior



complexity crosses a certain threshold. The human noospheric worldspace is vastly greater than that of any other (known) animal, despite our otherwise extensive kinship with animals, because humans achieved a complexity that made possible advanced symbolic-linguistic activity. Such linguistic capacity affords you, the reader, the ability to make sense of the black marks on this page. That other animals lack this capacity does not demean them; instead, they are perfect specimens of their own kind.

Because the size of the biosphere is so much greater than the whole human species, much less a single human being, a reader understandably resists the assertion that the biosphere is part of the noosphere. This concern can be alleviated by the following consideration: if we were to define humans strictly as physical beings, then it could be said that humans are “parts of” of the biosphere. In SES, Wilber states:

[T]he human compound individual is not a part of the biosphere. Rather, a part of the human compound individual [that is, the non-living physical aspect] is a part of the biosphere, and the biosphere itself is a part of the noosphere. And for just that reason, repression can set in; for just that reason, the noosphere can dissociate the biosphere....⁵⁰

As physical beings, humans are mere “parts” of the biosphere, which is after all literally composed of atoms and molecules, including those found in human bodies. As organic or living beings, however, humans are not parts of the biosphere, according to Wilber, because individual holons (organisms) relate to same-level social holons (their ecosystem or Umwelt) as members that are in constant interchange with the ecosystem and with the other organic beings that help to constitute the ecosystem. Such exchange relations are absolutely crucial for survival and growth. This is the nugget of truth in the claim made by Capra in *The Web of Life*: humans are strands in the great web.⁵¹ Systems theory environmentalists, however, tend to ignore interior depth altogether. Instead, Wilber states, they reduce the Kosmos to a monological map of the eco-



social system—which they usually call Gaia—that ignores the six or seven profound interior transformations that got them to the point where they could even conceive of a global system in the first place.

Consequently, this otherwise true and noble intuition of the Eco-Noetic Self [nature mystic] gets collapsed into “we’re all strands in the great web.” But that is exactly not the experience of the Eco-Noetic Self. In the nature-mystic experience, you are not a strand in the web. You are the entire web. You are doing something no mere strand ever does—you are escaping your “strandness,” transcending it, and becoming one with the entire display. To be aware of the whole system shows precisely that you are not merely a strand, which is supposedly your official [deep ecological] stance.⁵²

Individual and Social Holons

As we have seen, depth refers to increasing interior complexity; span refers to the numbers of any given kind of holon; and size refers to physical (including volumetric) extension. Wilber uses these distinctions in his discussion of the difference between individual and social holons. A major difference between the two, as we shall see, is that social holons lack the centered nexus-agency that characterizes individual holons, including cells and multi-cellular complex organisms. Additionally, individual and social holons follow different holonic logics: individual holons tend to grow larger in size and social holons tend to grow smaller, while both increase in depth. Moreover, for both individual and social holons, as depth increases, span almost always decreases. Environmentalists and many scientists alike often propose holarchies based on size alone, thereby indicating that they do not consider the depth dimension of phenomena. In figure 1, we see a typical cosmic holarchy that starts with atoms and ends with the whole universe. The triangle represents the usual view that the size (volumetric scale) is the best way to describe the



cosmic holarchy. This holarchy, however, makes no attempt to account for depth or span, nor does it distinguish between social and individual holons.

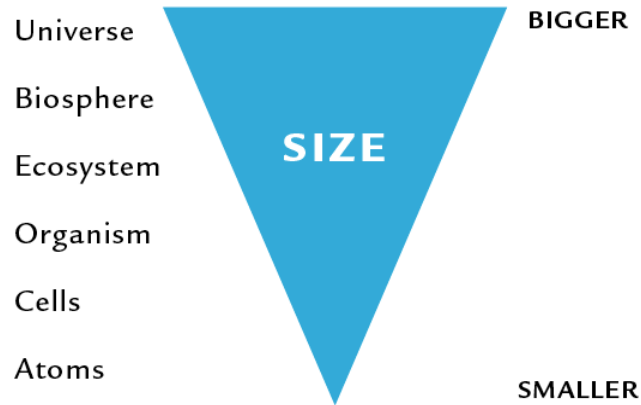


Figure 1.

Figure 2, which represents Wilber's view, divides the cosmic holarchy into social and individual holons, and shows how size, depth, and span vary in the course of the emergence of each kind of holon. The arrows indicate that for social holons, the evolutionary direction is from universe to ecosystems, whereas for individual holons, the evolutionary direction is from atoms to organisms.

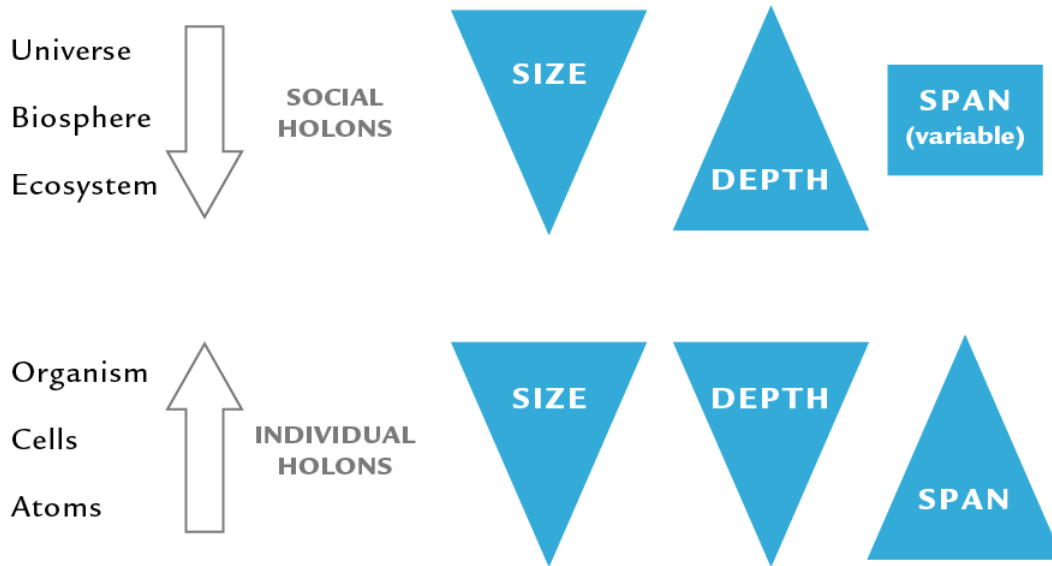


Figure 2.

According to Wilber, greater interior depth is achieved in individual holons as they develop from atoms to organisms. Moreover, the size of individual holons involved tends to grow larger (although there are some exceptions, e.g., some molecules are larger than some cells). Moving from atoms to organisms, size tends to increase, depth increases, but span decreases. There are fewer organisms than atoms, and organisms have greater depth. Moving from the social holons such as galactic clusters, galaxies, solar systems, planets, to ecosystems, size tends to decrease, depth increases, and span tends to increase, but is variable. For instance, with regard to span we may postulate that Earth started out with one ecosystem, but gradually developed more over the eons. Here, ecosystem span would have increased, but there would remain only one planet Earth. Regarding depth, we would be justified in asserting that pre-biospheric Earth had less depth and thus less significance than today’s Earth, which includes ecosystems and organisms. A holarchy based on increasing size alone proves tenable only by ignoring depth and thus significance, and by ignoring the distinction between individual and social holons.⁵³

Building on distinctions made by Erich Jantsch and others, Wilber distinguishes between compound individual holons and social holons, each of which has its own form of part-whole



relationship.⁵⁴ The compound individual holon versus social holon distinction, combined with the distinction between the interior and exterior domains of holons, allows Wilber to develop four parallel holarchies that avoid problems found in most single-axis hierarchies, including the one devised by Rowe. Although speaking at times as if he were an ontological realist, Wilber is true to his own aperspectivalism when he insists that assigning a number of holonic levels in any given holarchy is somewhat arbitrary. What someone designates as a holon is in part a function of that observer's perspective, although Wilber (like many scientists) would insist that a powerful perspective reveals something true about what is being investigated. Knowledge is not merely a collection of internally related interpretations, but also *valid interpretations* about phenomena insofar as they are capable of showing up within perspectives that humans can generate.

What reveals itself at one moment as a holon containing parts shows itself to be a part of a more inclusive whole at the next moment.⁵⁵ Compound individual holons, which are most consistent with the laws proposed by Feibleman and Koestler, have a relatively centered agency and autonomy. By comparison, social holons have a distributed or nexus-agency; that is, they are not truly individual.⁵⁶ The distinction between a social and individual holon is difficult to draw, Wilber concedes, because "it's almost impossible to define what we mean by an individual in the first place."⁵⁷ Wilber defines an individual holon as an enduring compound individual, composed of its junior holons and adding its own defining form or wholeness or deep structure. An individual holon exists inseparably from its social environment, but "to the degree that we can reasonably recognize [its own particular form or pattern], we will refer to an individual holon."⁵⁸

Social holons display a whole/part pattern, are rule-bound, can be thought to develop (as in stellar or ecosystem evolution), and "can function with various degrees of upward and downward causation," depending on their depth.⁵⁹ Wilber admits that some social holons, such as ant colonies, behave as if they were superorganisms, but he resists describing a social holon, such as



the State, as a literal superorganism, because all organisms have priority over their components. And yet with the rise of democratic structures, we like to think that the State is subservient to the people, and to the degree that the latter is true, then the social system is not a true organism (it is a social or environmental holon).⁶⁰

Holons always involve agency-in-communion. Macroscopic structures become environments for microscopic ones, and every system is linked with its environment by circular processes. Jantsch speaks of “the difference between ‘vertical organismic and horizontal ecosystemic (symbiotic) organization’—but the point, again, is that [individual and social holons] coevolve.”⁶¹ Indeed, as holons evolve, each layer of depth continues to exist in and to depend on networks of relations with other holons at the same level of structural organization.⁶² The micro (e.g., the organism) is always in relational exchange with the macro (e.g., the biome composing the social holon to which the organism belongs as a member). Whereas the organs of an organism (a compound individual holon) are parts of it and thus under its general control, the organisms in a biome are members of it and not under such strict control, because the complexity of organisms confers on them a relatively high degree of autonomy. An instance of a holon’s relative autonomy is its relative capacity for self-preservation in the midst of environmental fluctuations. Humans achieve such a high degree of complexity and relative autonomy that, as noospheric beings, they can dissociate from the environment, as in otherworldly religiosity or mind-body dualism that reject consciousness’s dependence on physiosphere and biosphere. Such “pathological agency,” however, lands humankind “in ecological hell.”⁶³ In SES, Wilber agrees with other hierarchy theorists that there can be influence in both the upward and downward direction in a holarchy. Human behavior can affect the biosphere (downward causation) in a way that disturbs this domain on which conscious life depends, and the biosphere can then positively or adversely affect humankind (upward causation). Such mutual influence does not mean, however, that humans are merely “parts” of the biosphere.



Occasionally, Wilber seems to condition his view that individual holons, such as humans, cannot be considered “parts” of a more inclusive social whole. In fact, there may be instances in which individual humans behave as if they were little more than functions, parts, or role-players in powerful social systemic processes. Wilber’s legitimate concern, however, is that destructive consequences have often ensued from polities (such as Stalinist Marxism or National Socialism) that depict individual humans as nothing more than organs of the state. Tomorrow’s eco-fascists (or eco-communists) would ignore the *agency* aspect of individual human holons and would overemphasize instead the *communal* aspect. Survival of the social collective, so we would be told, requires that individuals sacrifice themselves and their personal interests to the good of the superorganism of which all life is merely an expression. Wilber maintains, however, that a social holon, including the state, lacks “a locus of self-prehension, a unity feeling as a oneness. In more general terms, it lacks a locus of individual self-being.... the parts in this social system [the State] are conscious, but the ‘whole’ is not.”⁶⁴ If Wilber’s view is right, the fearless leader of an emergent eco-fascist state would be at best misguided in claiming that he is merely the mouthpiece or the servant of the biological whole whose interests are threatened by selfish human behavior. Arguably, both ecosystems and the totality of ecosystems lack the centered interiority or “consciousness” required to generate a perspective at all, much less one that the fearless leader would claim to be channeling. Critical analysis would be required to reveal what specific individuals and groups would be served by organizing society according to the dictates of an eco-fascist leader.

Cosmic Holarchy, Parts, and Wholes

The difficulties involved in sorting out a cosmic holarchy are legion. Wilber indicates that many noted thinkers, including Karl Popper and Irvin Laszlo, subscribe to a version of the following hierarchy, which confuses individual and social holons.⁶⁵ (Note: I insert “organisms” into the list for clarification.)



Biosphere
Society/Nation
Culture/Subculture
Community
Family
Personal Nervous System
[Organisms]
Organs/Organ Systems
Tissues
Cells
Organelles
Molecules
Atoms
Subatomic Particles

Insofar as higher hierarchical levels depend upon lower levels, which are their parts, this hierarchy is deeply problematic. For one thing, it mixes up individual and social holons, thereby raising some of the concerns that Rowe voices. For another, if this holarchy describes (as it seems to) the sequential stages in which its various levels formed, then biosphere should emerge more or less simultaneously with cells, not billions of years later, after the emergence of human nations! The biosphere does not depend upon human societies and cultures for its existence; they are not foundational for it. The human species may become extinct, but this event would not destroy the biosphere. Destroying the biosphere, however, would surely annihilate humankind. As Wilber puts it, the biosphere is shallower (less complex than) but more fundamental than human societies. The distinction between individual (micro) and social (macro) holons should not lead one to conclude that the macro is on a higher level than the micro. Instead, individual and social “are two aspects of the same thing, not two fundamentally different things (or levels).”⁶⁶ Hence, an ecosystem “isn’t a particular level among other levels of individual holarchy, but the social environment of each and every level of individuality in the biosphere.”⁶⁷



Corresponding to each individual organic holon, then, is an environmental or social holon in which the individual participates and on whose existence the individual holon depends.

According to Erich Jantsch, the first ecosystem was composed of the individual holons of prokaryotic cells. Hence, the biosphere cannot be the final hierarchical level, because the biosphere already emerged hundreds of millions of years ago along with prokaryotic cells. Ever since, the biosphere (social holon) has been co-evolving with life forms, including individual organisms and species. Today's biosphere conditions and is conditioned by the totality of organisms that are members of it. The interior complexity of the noospheric human individual is founded upon the biosphere, and the human's organic aspect has constant interchanges with the biosphere, but neither the individual's interiority nor the culture of which the individual is a member can rightly be regarded as part of the biosphere.

Following Jantsch, Wilber argues that there is a relationship between atoms, early cells, and organisms (individual holons) and the early universe, the biosphere/Gaia, and terrestrial ecosystems (social holons). (See figure 3.) Atoms coalesced and formed the enormous clumps that characterized the early universe, cells coalesced and formed the first version of the terrestrial biosphere, and organisms coalesced and formed ecosystems. Hence, individual holons (e.g., cells) and their social holon counterpart (e.g., biosphere) co-arise and are mutually dependent.

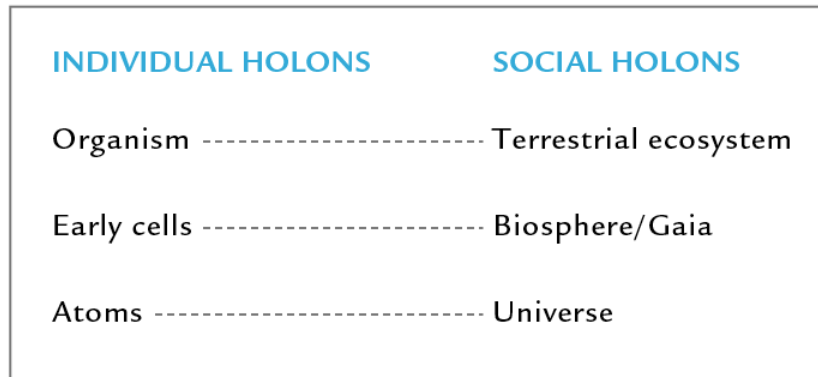


Figure 3.

Now, let's return to our earlier questions. Is the noosphere part of the biosphere or is the biosphere part of the noosphere, where the latter is understood as transcending and including the biosphere? Is there a relationship of horizontal inclusion, such that the noosphere is in the biosphere as a strand in the web of life, or is the relationship vertical, such that the biosphere is in the noosphere as a foundation for noospheric mentality?

If the noosphere were merely a strand in the web of life, rather than an emergent dimension that transcends (and includes) life, then the following statement would be valid: The physiosphere gives rise to the biosphere, which includes (contains) all forms of life, including noospheric life. Although widely accepted, this assertion assumes that interiority (noosphere, mind, *nous*) is simply a non-emergent function of living matter (*bios*), which is always described from a third-person perspective as a physio-organic phenomenon that has insides and outsides, but no interiority. Modern science has typically accorded interiority (prehension, irritability, perception, cognition) neither to matter nor to life. Hence, ascribing interiority to noospheric life forms—including human beings—becomes very difficult to defend.⁶⁸ Indeed, like mid-twentieth century behaviorists, some well-known cognitive scientists continue to deny that “consciousness” is anything other than material brain states. For such scientists, if interiority exists at all, it is a very late (not to mention puzzling) arrival on the cosmic scene.



Figure 4 below, which represents Wilber’s approach, indicates that physiosphere, biosphere, and noosphere always feature both interior and exterior aspects. Following Alfred North Whitehead, among others, Wilber maintains that noosphere represents a remarkable advance upon the interiority that always already characterizes both biosphere and physiosphere.

Noosphere (mind)	Noosphere (neocortex)
Biosphere (perception)	Biosphere (life)
Physiosphere (prehension)	Physiosphere (matter)
INTERIOR CORRELATES	EXTERIOR CORRELATES

Figure 4.

In view of Wilber’s contention that holons involve at least four aspects—individual-interior (UL), collective-interior (LL), individual-exterior (UR), and collective-exterior (LR)—a more adequate depiction of the relations among physiosphere, biosphere, and noosphere is found in figure 5, which is a shorthand version of Wilber’s more complex diagrams.



	INTERIOR	EXTERIOR
INDIVIDUAL	III. Noosphere (mind) II. Biosphere (feeling/perception) I. Physiosphere (prehension)	C. Noosphere (triune brain) B. Biosphere (limbic system) A. Physiosphere (atoms, molecules)
	UL	UR
COLLECTIVE	1. Physiosphere (inter-prehension) 2. Biosphere (inter-perception) 3. Noospheric (inter-mind, culture)	i. Physiosphere (matter systems) ii. Biosphere (life systems) iii. Noosphere (human civilizations)
	LL	LR

Figure 5.

In BHE, Wilber sometimes makes assertions that he must later qualify. For example, he writes that often even those opposed to conceptual hierarchies nevertheless subscribe to something like the following holarchy: “atoms are part of molecules, which are parts of cells, which are parts of individual organisms, which are parts of families, which are parts of cultures, which are parts of the total biosphere.”⁶⁹ Wilber remarks that this holarchy is more or less right, except for the incorrect positioning of biosphere. Commenting on this passage, Rowe contends that the categories at issue do not mesh with one another, primarily because they do not follow his (Rowe’s) logic of *volumetric containment*. Given Wilber’s own distinction between compound individual and social holons, Wilber would agree with Rowe that the above-mentioned holarchy has problems, but not necessarily the ones identified by Rowe. In the quotation that Rowe cites above, which occurs prior to BHE’s explicit discussion of social and individual holons, Wilber observes that regarding the social holon aspect of the families to cultures to biosphere holarchy, the placement of biosphere is wrong on two accounts. First, the holarchy goes astray by mixing



individual with social holons, as Wilber maintains that holarchies should distinguish between the two kinds of holons. Second, as we will see in more detail below, biosphere would not come last in a sequence of social holons, but instead would arise early on, simultaneously with the development of individual life forms.

Yet Rowe states, a “logical ecological holarchy follows the principle of containment, viz., each level in the sequence is enveloped as a physical volumetric part by the next higher level.”⁷⁰ Rowe’s holarchy is based on relative size. As in nested Chinese boxes, Rowe states, “each higher level is the environment of those below.” After agreeing with Wilber’s nesting hierarchy for compound individual holons (molecules are parts of cells, cells are parts of organs, etc.), Rowe parts company with Wilber by stating that organisms

*are parts of geographic ecosystems, which are parts of the ecosphere. Each higher level is the environment or “field” of the ones below and each lower level is a functional part of the levels above. Note that in this sequence human organisms appear as one among many species—parts of the sectoral ecosystem that Earth comprises. Humans are made from and sustained by the living Planet. Physically and mentally they are Earthlings. Truly they are marvellous [sic] creatures but not the be-all and end-all of creation.*⁷¹

Wilber would certainly agree that humans, considered as organisms, are one species among many, are sustained by the living Planet, are marvelous, and are not the be-all and end-all of creation. Wilber maintains, however, that humans are not only organisms, but are also noospheric or conscious beings. Such consciousness, however, whether human or animal, has no *simple location* in the sensorimotor world. Hence, neither consciousness nor culture can be “contained” within a three-dimensional volumetric framework. True enough, the brain that correlates with consciousness does have such a location, and in some respects the societies that correlate with cultures (norms, values, philosophies, and so on) do have locations. However,



because human interiors (both individual and cultural) are not spatially locatable, and because the noosphere (consciousness) both includes and transcends the biosphere, humans cannot be adequately described as “part of” the biosphere. Human awareness is founded upon the biosphere and physiosphere (as are other organic forms of awareness) but cannot be reduced to them.

Wilber would also disagree with Rowe’s decision to speak of ecosphere rather than biosphere as the topmost rung in the terrestrial hierarchy. All planets in the solar system have an ecosphere, that is, a physiosphere, defined as the interlocking totality of surface-level planetary systems. Jupiter has a perfectly respectable (in fact, awe-inspiring) ecosystem, but (according to virtually all contemporary specialists) lacks life forms. No life forms, no biosphere. Wilber’s distinction between compound individual holons and social holons questions the notion that organisms are “parts” of ecosystems.⁷² One place to begin this discussion is with the correct hierarchical positioning of the biosphere. Virtually all hierarchy ecologists put a term such as biosphere, ecosphere, Gaia, or planetary ecosystem at the top of terrestrial hierarchy, thereby showing their basic agreement with Rowe’s physical-inclusion, nesting Chinese boxes approach. The problem here is that the biosphere or Gaia emerged along with life itself. Life and biosphere are interdependent, have profoundly influenced one another for millions of years, and are founded on the physiosphere. If mountains and rivers, oceans and plains, mantle and core vanished, so would organisms and their corresponding biosphere. Because biosphere and organisms co-evolve, to say that organisms are “parts” of the biosphere is problematic.

Value, Holarchy, and Nature Mysticism

Taking the foregoing into account, we conclude that value-considerations help to answer the question, “Is the biosphere or the noosphere primary?” Wilber maintains that there are three value domains: Ground, extrinsic, and intrinsic value. In terms of *Ground value*, neither the biosphere nor the noosphere is primary. Instead, each is of equal value as a manifestation of Spirit. Spirit refers both to the ultimate source of all phenomena and to that which acts as the



ultimate lure (attractor) to cosmic development, which seems to involve the emergence of ever more inclusive wholes. In terms of *extrinsic value*, however, the biosphere is primary because it is more fundamental. If one were to destroy the biosphere, one would also destroy the noosphere. On the other hand, all humans can be destroyed at no cost to the biosphere. Thus, the biosphere is primary, and this means that the biosphere is part of us. Remove it and we don't exist. The noosphere is not internal to (a part of) the biosphere, however, because if it were, the biosphere wouldn't work without us. But the opposite is true: Humans (and other mammals) don't work without the biosphere.

Many environmentalists intuit this, but they confuse what is most fundamental (Gaia/Biosphere) for what is most significant (Humans/Noosphere), or rather, what has the most *intrinsic* value. According to Wilber's holarchy, because noospheric beings, including humans, have such enormous depth, they have greater intrinsic value than non-noospheric life forms. Wilber's views here largely overlap with those of Holmes Rolston III, one of the world's leading environmental philosophers.⁷³

Of course, one may disagree with a value hierarchy based on increasing depth, but defending most alternatives is no easy task! Wilber understands the motives of most environmentalists who attempt to overcome anthropocentrism by discounting differences between humankind and other organisms by proclaiming "everything is part of nature." Such an assertion, however, not only avoids the hard problem of defining "nature," but also confronts the widespread intuition that something important differentiates humankind from other organisms. Such a difference does not legitimate heedless exploitation of nature; instead, it may well enjoin humans from engaging in such practices by making increasing *depth* something to value across socio-cultural divides. We practice reductionism when we reduce interiority to physio-organic conditions, and we fail to make an important hierarchical distinction when we conclude that human interiority does not



amount to a significant deepening of such interiority. A truly integral ecology must honor both interior and exterior dimensions of all phenomena in order to arrive at an adequate holarchy.⁷⁴

Here we see that Rowe recognizes the importance of the interior and spiritual domains as he quotes Fritjof Capra:

When the concept of the human spirit is understood as the mode of consciousness in which the individual feels a sense of belonging, of connectedness, to the cosmos as a whole, it becomes clear that ecological awareness is spiritual in its deepest sense.⁷⁵

(Whether Capra is capable of providing an adequate description of “interior and spiritual domains” within the limits of systems theory is another question.) Rowe may believe that this statement runs counter to the views of Wilber, who allegedly “depreciates the physical and natural” and “cannot conceive any other source of values” apart from humankind.⁷⁶ In fact, as we saw earlier, Wilber asserts that everything has the same basic ground value, quite apart from any interest humans may have in it. Moreover, Wilber affirms that all phenomena—living and non-living—have a “worldspace” of their own. People should honor the perspectives afforded by such worldspaces, though ultimately this would require a measure of respect for all phenomena, from rocks to humans, from galactic clusters to ecosystems. Movement toward this dramatically non-anthropocentric view, however, first requires development of world-centrism, that is, mutual understanding among humans. A genuinely planet-centered perspective, which may emerge in the distant future, would eventually combine ecocentrism with worldcentrism.

In BHE, Wilber describes nature mysticism in the same way Capra describes ecological awareness. When hiking, your separate-self sense might temporarily dissolve, allowing you to identify with the entire material, sensorimotor world.⁷⁷ There is no longer looker and looked at, subject and object; instead, “suddenly there is no looker, just the mountain—and you are the



mountain. You are not in here looking at the mountain out there. There is just the mountain, and it seems to see itself, or you seem to be seeing it from within. The mountain is closer to you than your own skin.”⁷⁸ You are engaged in this decentering process as you mature and evolve into greater moral depth. Gradually, you transcend your merely ethnocentric or sociocentric identity, and begin to identify with a global perspective. You learn to take into account the concerns of people all over the planet, not just those who share your values and perspectives. Wilber then says:

It’s only a small step further to actually experience your central identity, not just with all human beings, but all living beings. The global or worldcentric awareness simply steps up another notch, escapes its anthropocentric prejudice, and announces itself as all sentient beings. You experience the World Soul.⁷⁹

Despite the reference here to sentient beings, Wilber’s earlier reference to becoming one with the mountain is not consonant with the view that nature mysticism limits its identification to plants and animals. Indeed, Wilber adheres to a form of pan-interiorism, according to which all beings, at whatever level, have at least some perspective, some capacity to experience what they interact with and to share that experience with other beings.

If we were to omit from consideration humanity’s self-conscious awareness, a capacity acknowledged in virtually all religions and mythology as strange, dangerous, wonderful, and demanding, we would conclude that the nature mystic does not experience nature as “part of” her. Nature mysticism *transcends* the limits of egoic, ordinary human awareness. Who or what, then, is experiencing this mystical awareness?

In a way consistent with the majority of religious commentators, Wilber answers: A trans-human awareness, or World Soul, that includes ordinary human awareness—and in fact, all other forms of organic and inorganic awareness—as an aspect of itself. The nature mystical experience is



awe-inspiring precisely because it catapults one far beyond the ordinary understanding of self and world, and reveals instead that “consciousness” is somehow both profoundly bound up with, but also inclusive of (and thus beyond the limits of) the material realm. Even the capacity of a working scientist to describe the planet as a physiological-organic whole represents an extraordinary feat, one that goes unmentioned by those systems-theory oriented ecologists who fear that referring to any special human capacity reinforces arrogant anthropocentrism. Wilber, to his credit, refuses to pretend that the development of ever more complex forms of human interiority is irrelevant to the fact that environmentalists are able to remind us of the beauty of, and our dependence upon, the living planet Earth.

Developmental Holarchy, Volumetric Hierarchy, and Parts and Wholes

As we saw earlier in figure 5, Wilber’s holarchy, as described in both SES and BHE, can be seen as containing four hierarchies that correspond to one another in various ways. For example, at the individual holonic level, the interior capacity for “irritability” corresponds to the exterior structure of a eukaryotic cell (individual holon); a cell’s irritability corresponds to vegetative capacity at the interior-collective level and to a heterotrophic ecosystem at the exterior-collective level.⁸⁰ According to Wilber, after the development of neuronal organisms, later-evolving levels of complexity centered primarily on brain developments, which correspond to interior capacities. Hence, to the reptilian brain stem corresponds the interior capacity for impulse, and to the limbic system corresponds the interior capacity for emotion. A major reason that he declines to ascribe centered interiority to social holons, including ecosystems and Gaia, is that they lack the brain structure that correlates with such interiority, although the “interior” status of complex systems remains a very complex and contested area. In any event, Wilber maintains that adequate analysis of a given holon must take into account how it manifests in terms of these four dimensions. In a book that we are co-authoring, Sean Esbjörn-Hargens and I will argue that a truly *Integral Ecology* subscribes to a version of holarchy theory and approaches any given level



of an ecological problem from the four perspectives described in Wilber's quadrants. Investigators using suitable methods from a given perspective will discover aspects of a phenomenon that cannot reveal themselves from another perspective. A truly aperspectival (non-monological) discipline has the flexibility to first realize, and then actualize, the multi-modal perspectives necessary for healing each ecological occasion.

Approaching ecological issues from the perspectives provided by the AQAL model helps to adjudicate some battles in ecological theory. For example, the contest between ecosystem ecology and population ecology that is being hotly debated seems easier to understand when using the AQAL model as an investigative tool.⁸¹

Consider J. Baird Callicott, who interprets Eugene Odum's thermodynamic ecosystem ecology as saying that organisms are merely temporary configurations of energy flowing through ecosystems.⁸² (Callicott, more so than Odum, acknowledged the relative autonomy of hierarchal structures in ecosystems, and he viewed ecosystems as inclusive of the biosphere.) If an environmental social philosophy is based on this reduction of organisms to functions of systemic processes, then individuals must conform to the aims and support the workings of the systemic whole. Karen J. Warren and Jim Cheney persuasively argue that ecological hierarchy theory disallows the kind of reductionism that Callicott proposes.⁸³ Organisms have a degree of autonomy and reality that cannot be so easily discounted. Moreover, organisms are not so much "parts" of an ecosystem as they are members of it. Life forms and ecosystems mutually condition and influence one another. In Wilber's view, thermodynamic ecosystem theory has validity within the limits imposed by its perspective and methods. Insofar as ecosystem theorists ignore or discount the validity of truth claims made about environmental phenomena from other legitimate perspectives, such as population dynamics, environmental ethics, first-person experience, and so on, ecosystem theorists engage in what Wilber calls "quadrant hegemony." Despite the many merits of hierarchy theory, it has the same drawback of other instances of



General Systems Theory; namely, it cannot take into account individual and collective interiority.⁸⁴ Hence, the hierarchical rankings that ecological hierarchy performs are missing some important dimensions.

Population ecologists, who examine organisms primarily from the Lower-Right (social-exterior) quadrant, grant reality-status to species, demes, populations, and communities and the interactions within and among these various groupings. Such ecologists often treat ecosystems merely as epiphenomena of, or as resource bases for, organisms in the on-going struggle for fitness. As in the case of ecosystem theory, however, population ecologists go astray if they assume that their perspective provides the most valuable truth about the relation between populations and ecosystems. Both perspectives are important for observing, interpreting, and making predictions about such complex phenomena, and both perspectives are limited. Both approaches offer important truth claims that must be considered in any comprehensive understanding of ecosystem and populations.

However, there is a “part/whole confusion” at work in both perspectives. Ecosystem theorists complain that population dynamics view the “environment” merely as resources for organisms, thus failing to understand the allegedly all-embracing character of the biosphere. Arguably, however, organisms/species are not “parts” of the biosphere/ecosphere but instead are members of the biosphere that co-evolve with and co-constitute it.⁸⁵ Organisms are compound, multi-level individuals that engage in complex relations with other holons at each level and with the “environment” pertinent to each such level.

Population ecologists criticize ecosystem ecologists for reifying a theoretical construct (namely, “the ecosystem”) as a kind of transcendent structure that is ontologically, temporally, and logically prior to populations. While acknowledging the force of this objection, Wilber would also argue that from a certain perspective, it does make sense to interpret organisms as dissipative structures sustained by the energy flowing through hierarchical levels of an



ecosystem. From this perspective, what looks most “real” are energy-flows and systemic-hierarchies.

Douglas J. Buege takes a position that favors Rowe and counters Wilber.⁸⁶ According to Buege, ecosystems are individuals composed of parts, namely, species and their constituent individuals, in a way analogous to the organs contained within organisms. Calling on hierarchy theory, Buege argues that both individual organisms (studied by population ecologists) and ecosystems (studied by ecosystem ecologists) have the requisite internal complexity needed for moral status. Buege maintains that ecosystems are analogous to a baseball team. Loss of a team (e.g., when the Milwaukee Braves moved to Atlanta) is distinct from and more important than loss of individual players (e.g., when a star pitcher is traded to another team). Buege writes:

The loss of an entire habitat is a much greater loss than the loss of an equivalent number of individual organisms from various ecosystems because ecosystems are not merely collections of living and non-living beings. Thus, the intuition that higher-level entities such as species and ecosystems are more valuable than the individuals of which they are composed, an intuition shared by many environmental ethicists, may be justified.⁸⁷

These assertions beg further questions. For instance: how valid is the comparison between a baseball team and its members and the constituents of an ecosystem? (Consider: When a major league team moves to another city, the players typically do not perish, whereas loss of an ecosystem entails the death of its living constituents.) What is the “equivalent number of individual organisms” that can be equated with “an entire habitat”? In what sense are ecosystems “more valuable” than the species and individuals found in them? Ecosystems are more valuable insofar as they are more fundamental, but arguably individual organisms have greater intrinsic worth because of their relative autonomy and enormous interior and exterior complexity.



Despite such problems, Buege raises an important issue, namely, the axiological status of ecosystems (and, by extension, the systems of all such systems, or Gaia). Holmes Rolston III, one of the leading English-speaking environmental philosophers, has frequently wrestled with this issue. Although sharing with Wilber the notion that highest value is concentrated in the most complex organisms (that is, certain kinds of compound individual holons), Rolston wants to acknowledge both the relative reality and the value-dimension of ecosystems. An ecosystem may lack focused agency and consciousness, but “it has a ‘heading’ for species diversification, support, and richness. Though not a superorganism, it is a kind of vital ‘field.’”⁸⁸ For this reason,

Ecosystems are in some respects more to be admired than any of their component organisms because they have generated, continue to support, and integrate tens of thousands of member organisms. The ecosystem is as marvelous as anything it contains.... [T]he ecosystem is the satisfactory matrix, the projective source of all it contains. It takes a great world to breed great lives, great minds.⁸⁹

The relation between an ecosystem (defined as a social holon) and its organisms (defined as individual holons that are members of the ecosystem), is a very complex issue that merits continuing inquiry.

Rowe’s holarchy has more in common with Buege’s position than with Rolston’s. Buege states: “That Nature-as-Earth represents a higher level of integration than the human is a logical extension of the holarchy of containment beyond organisms.”⁹⁰ “Beyond the organism” is the level that Rowe calls the geographic Ecoregion or Bioregion, “a chunk of Earth space resembling a giant terrarium within which humans and other organisms live, move, and have their being.”⁹¹ Whereas Wilber would situate organisms as *members* of such a bioregion, thereby recognizing their relative autonomy, Rowe situates organisms as *parts* of the bioregion, which is itself part of the most inclusive and integrated whole, the ecosphere. In an essay called “From Shallow to Deep Ecological Philosophy” (henceforth, FSD), Rowe argues that ecosystems and ecosphere



are alive.⁹² Restricting life solely to organisms, he argues, invites contempt for the allegedly abiotic constituents of the ecosphere, the terrestrial whole—from Earth core to atmosphere, which is the ultimate source of Earth’s creativity. Photos of the Earth from space “are intuitively recognized as images of a living ‘cell.’ Inside that ‘cell’ cheated by sight, people perceive a particular world separable into important and unimportant parts: the ‘organic’ and the ‘inorganic,’ ... ‘living’ and ‘dead.’”⁹³ If the Earth were in fact a cell, perhaps it could be regarded as alive, but soon after describing the Earth as an organism, Rowe concedes that it is not. Rowe, surprisingly, ends up deconstructing his own argument, which seems to hinge on this “Earth-as-organism” point.

Gaia as Superorganism: Recipe for Ecofascism?

Rowe justifies his honorific claims about the ecosphere by appealing to Feibleman’s fourth “law of the levels,” according to which the mechanism of any organization lies at the level below, and its purpose at the level above. (This contentious claim seems to deprive any given phenomenon of value or purpose in itself. Instead, something at a given level gains purpose only insofar as it is a “part” of something higher or more encompassing. According to such a scheme, we might conclude that individual agency achieves value only insofar as it is part of the communal good. This “law of the levels” is a move toward deeply problematic social concepts.) “Mechanisms,” therefore, can only be discerned by analyzing the functional parts at work in the level below the holon in question.

Following this logic, the function of any given sectoral ecosystem of Earth can be learned by inspecting the interactions of its parts; these include organisms (including people), landforms, soil, air, and water. Ascending the holarchy, the purpose of each holon is revealed in the context of that which encloses it. Thus the role of the heart is to maintain the health of the animal organism. The niche of the animal is to play its part in maintaining the ecosystem’s integrity. This is a clue to Rowe’s view of the role, niche, or purpose of the intelligent human animal in the



context of Earth's ecosystems and of Earth itself. Humans, like all holons, ought to act in ways that maintain the health and integrity of the higher-level holons—the regional geographic ecosystems and the ecosphere—in which they are encapsulated.⁹⁴

In FSD, Rowe reinforces his point: “The purpose of the human being must be found ecologically, in the role played vis-à-vis ecosystems and the ecosphere, not in the narrower roles played vis-à-vis family, ethnic group or society at large.”⁹⁵ Rowe's shorthand conclusion: “Earth before organisms. Ecosystems before people.”⁹⁶ Writing five years later, Rowe acknowledges that some will ask whether the “the holarchy that places Earth above people [is] just another path to totalitarianism, to ecofascism?”⁹⁷ Concern about ecofascism, we are told, arises from individualists and humanists who assume that “only people possess high intelligence, are important, and loved by God.”⁹⁸ Fascism, Rowe correctly points out, is a human institution, not a natural one. Even though it is “ecological reality” that “Humans as Earthlings *are* subservient to the Earth [my italics]. Earth's ecosystems express no dictatorial decrees as to human behavior.”⁹⁹ Humans are free to pursue whatever reckless and self-destructive paths they want. “Earth generally shows humans the folly of their ways slowly, her responses presented as lessons to be learned. Whether Earth is recognized as humanity's body/mind/spirit source and support, and whether or not people act responsibly on that knowledge is their choice.”¹⁰⁰

To appraise these assertions, let's begin with the notion that humans “ought” to behave as other holons do. Is the “ought” here a prudential ought? If so, then Rowe is surely right. Humans would be foolish to soil their own nest, to destroy the conditions needed for their own survival. To extend this sense of “ought” to non-human holons is a stretch, however. Non-human holons do what they do, without operating under the aegis of a prudential ought. Prudence emerges with organisms capable of taking stock of their situation and intentionally adjusting their behavior in ways that are most advantageous for whatever end is in view. Some mammals other than humans engage in prudential behavior, but humans engage in it even more intensively. Surely we would



be misusing the prudential meaning of the term “ought” were we to say that a niche “ought” to play its role in maintaining the ecosystem’s health and integrity.

Presumably, some readers would agree with me that Rowe also uses “ought” as an ethical imperative. After all, he asserts that Earth is “humanity’s body/mind/spirit and support.” If Earth is endowed with such honorific qualities, then ought humans to treat the Earth as if “she” were a person, an integrated agency endowed with creative powers and even intentions? Indeed, Rowe asserts that in fact Earth can be conceived as “one integrated entity,” to which we can most properly attribute “the creative synthesizing quintessence called ‘life.’”¹⁰¹ By regarding humans as parts included within the ever-higher levels of bioregion and ecosphere, Rowe states that we “shift from navel-gazing homocentrism to Earth-venerating ecocentrism. Matched with Earth’s beauty, this is a transcendence [of which] Camus...would approve.”¹⁰² Having already personified Earth as an integrated, transcendently creative female, Rowe adds an aesthetic justification to his claim that humans have an ethical obligation of “ministering to the health of the more creative Being [Earth]” that envelops us: Earth is beautiful.

In presenting truth claims pertaining to Earth’s highest position on moral, ontological, and aesthetic hierarchies, Rowe fails to ask the question: What conditions are necessary for him to make such truth claims? Wilber’s answer would be that such cognitive, ethical, and aesthetic judgments presuppose an extraordinarily complex, multi-leveled *interiority* that has taken many millions of years to evolve. In his hierarchy, Rowe cannot find an adequate way to acknowledge such interiority, including the depth that it has reached in humankind, as evidenced by Rowe’s own scientific-philosophical perspective, and the interiority of those who share his perspective. Hence, he concludes that greater external complexity combined with greater size and greater systemic inclusiveness justify the assertion that Earth, the ecosphere, includes humans as component parts. (This is a typical “bigger is better” formula, which itself has, ironically, contributed to our urgent ecological situation.)



Here, we may ask: Who exactly is making the assertion that humans are component parts of the ecosphere? Is it Earth Herself, acting as the ventriloquist for whom Rowe serves as the lower-order puppet? If Rowe purports to speak on behalf of Earth, by what criteria are we to assess the adequacy of his speech? In “From Shallow to Deep Ecological Thinking,” when criticizing what he regards as a misguided hierarchical scheme, Rowe asserts: “All such hierarchies are abstract conceptual schemes devised by humans and imposed on nature, and clear thinking demands that the different levels be coherent and congruous.”¹⁰³ Here, at least, Rowe concedes that he is not offering us a map of reality but instead is giving us his own interpretation of the structure of terrestrial reality. Elsewhere, however, Rowe displays such strong convictions about the veracity of his far-reaching claims regarding Earth and humanity’s place within it, that he evidently confuses his abstraction with the living Earth. Thus, after indicating that we “intuit” the Earth as a cell, Rowe concludes that in fact:

Earth is not an organism, nor is it a super organism as Lovelock has proposed, any more than organisms are Earth or mini-Earth. The planetary ecosphere and its sectoral volumetric ecosystems are SUPRA-organismic, higher levels of integration than mere organisms. Essential to the ecocentric idea is assignment of highest value to the ecosphere and to the ecosystems that it comprises.¹⁰⁴

Capitalizing “supra” does not replace the explanation required to demonstrate that Earth has a higher level of organization than do organisms. Considering how tightly coupled organs are to organisms, many biologists have resisted the idea that ecosystems—with their more loosely coupled communities—are superorganisms.¹⁰⁵ Still, some people support the idea that ecosystems, and even the total terrestrial biosphere, should be considered individuals, insofar as they are self-organizing phenomena that have specific effects.¹⁰⁶ Even Wilber admits that a social holon such as an ecosystem shares many traits with individual holons, but lacks an



individual's dominant monad or nexus-agency, because agency is distributed throughout the system's complex matrices.

Defending the possibility of the individuality of ecosystems, Stanley N. Salthe argues: "If our observations had the same scale relations to an organism as they have with respect to most ecosystems of biome size, we would not suppose an organism to be an individual either."¹⁰⁷

Elsewhere, Salthe states that:

Planet Earth is itself a dissipative structure (Gaia), and it becomes obvious that its degree of control over generally occurring natural forces is, at its own scale, no less elaborate than that in a cell in the sense of requiring highly specified descriptions at appropriate scales....¹⁰⁸

Although "not advocating ecosystems as 'superorganisms' [as did F. E. Clements in particular]," Salthe maintains that from a very general perspective "organisms could be taken for what one might call 'superecosystems'...."¹⁰⁹ That is, Salthe and others recommend that we model individuals on ecosystems, rather than the other way around. In making this move, Salthe seems to make social holons (rather than individual holons, as in Wilber's case) the paradigm of self-organizing hierarchical systems. Nevertheless, Salthe and Wilber would apparently agree that organisms are characterized by internal cohesiveness and a measure of interiority that is at least not yet discernible (not to mention explicable!) in ecosystems.

Despite Rowe's claims to the contrary, the very tight containment/coupling scheme that he proposes, when combined with his ethico-aesthetic imperatives, can in fact justify something like ecofascism.¹¹⁰ Rowe is right that ecofascism is a human institution, but it is based on a belief, such as the system described by Rowe, according to which humans are merely parts of a more integrated, transcendent, and therefore *more valuable* whole.



If Rowe is right, our real purpose in life and our moral obligations are not toward our families and societies, but to Earth Herself. As an expression of the highest life form, Earth, we hominids are obligated to be subservient to Earth's own requirements. An aspiring eco-leader may ask those who share this deep ecological or ecospheric view: How can such service best be achieved? One answer: By dismissing from their posts, and otherwise silencing, all those benighted scientists who disagree with the deep ecological or ecospheric perspective. Another answer: By forcibly organizing other humans and their institutions in ways that serve the highest good, promoting Earth's well being. Who will help the leader to organize the ecologically ignorant masses, concerned primarily about themselves, their families, and their societies? And who will decide what behaviors help and which hurt the Earth? The answer: People endowed with special intuition about what Earth really needs, and people capable of learning the lessons that Earth Herself teaches us. Selfish individuals, of course, might prefer to pursue their own narrow purposes, but noble-minded Earth-servants, empowered by the human organizations that follow Earth-teachings, will intervene to prevent such base-minded individuals from doing any serious harm. I will pursue this scenario no further. It may be that Rowe verges on committing what Koestler called the "eighth deadly sin": self-transcendence through misplaced devotion to a powerful figure or a higher cause. Such self-transcendence amounts to personal and social regression.¹¹¹ According to Koestler, whose negative experience with Soviet-style communism influences his views, misguided and unbalanced integrative tendencies (in the form of totalizing social movements, for example) are far more dangerous than self-assertive tendencies.¹¹²

Concluding Remarks

In his 1992 essay, "The Integration of Ecological Studies" (henceforth, IES), Rowe rehearsed many of the claims in the two essays to which we have already referred.¹¹³ Here, he indicates his preference for hierarchies that proceed from the top down; that is, from the most inclusive (e.g., biosphere) to least inclusive (e.g., individual organism). He invidiously contrasts top down



approaches with the bottom up approach used in most textbooks. Bottom up approaches emphasize the usual hierarchy of molecules, cells, organelles, organisms, and only then move to biomes, ecosystems, and ecosphere. The bottom up approach invites inconsistencies because, like all ‘bottom up’ taxonomies that set themselves the task of synthesizing wholes from parts, it lacks an integrating holistic framework from the beginning. Watershed ecosystems cannot be discovered by contemplating populations of trees or forest communities. In short, patterns cannot be discovered “from below.”¹¹⁴

In Rowe’s view, those who follow the bottom up approach are “unconcerned with ontology (the reality of nature)” and rely instead “only on epistemology (science’s analytic mode of knowing).”¹¹⁵ By contrast, Rowe’s top down approach “imposes internal consistency, because each lower level is derived by subdivision of the one above, as a component of it, and each level constitutes a whole for the levels below.”¹¹⁶ According to Rowe, the bottom up approach (physiology) is related to the lamentable inside-out view adopted by most biologists, who start with the constituents of organisms. By so doing, however, they can never piece together the holistic (ecospheric) puzzle. The alternative approach, which is outside-in (ecology) and top down, reveals

that ‘life’ is function of the ecosphere and its sectoral ecosystems, not of organisms per se. Organisms are parts of the supra-organismic systems from which...they came. Their roles, purposes, and niches are to be found not so much by reference to others of their kind, or to related kinds, as by reference to the enveloping ecological systems of which they are parts.¹¹⁷

Stan Salthé tends to support aspects of such claims, when he writes that Gaia’s aims “ought never to be conflated with those of people, who (like red blood cells) are at ‘her’ disposal, not the reverse. We are parts of systems larger in scale than ourselves.”¹¹⁸ Wilber would reply that such assertions continue to neglect that humans are not merely physical or organic beings but



additionally noospheric ones, and that the noospheric aspect of human existence cannot be considered merely a function or part of an all-encompassing physio-organic system, including Gaia.

In their “Comments on Rowe’s Article” (henceforth, CRA), hierarchy theorists T. F. H. Allen and T. W. Hoekstra question the validity of Rowe’s holarchy.¹¹⁹ First, they state that he overemphasizes nesting hierarchies, thereby neglecting the clarity provided by describing scalar phenomena in terms of non-nesting hierarchies (e.g., food chains). Moreover, they find

Rowe’s distinction between looking in towards mechanism (physiology) as opposed to outwards towards role (ecology) overstated.... By such an important cleaving of the two protocols one misses the important point of Koestler (1967), that a given structure is the interface between processes driven from below and structural constraints imposed from above.¹²⁰

Analogously, Rowe’s overemphasis on top-down hierarchies also runs counter to Koestler’s holonic scheme. Bottom-up approaches show the limits of what is possible (Wilber would speak of constraints, communion, Agape, responsibilities), whereas top-down approaches “focus on the special cases that upper level structures allow.”¹²¹ Of all the arrangements that physical forces make possible, only certain ecologically consistent structures actually occur. Rowe correctly asserts that upper level structures cannot be predicted from the lower level dynamics that they constrain. However, he omits that it is also not possible to tell from upper level structures alone what limits are fundamental (from below) and those that are local structural restrictions. Both approaches, bottom-up and top-down, are needed to reap the conceptual harvest made possible by Koestler’s idea of holonic hierarchy.

Finally, Allen and Hoekstra contend, “Rowe is reifying ‘ecosystem’ even though it is after all only a conceptual device.”¹²² Because “levels of organization arise from” decisions made by



observers, “it makes no sense to us to assert that ecosystems are material, or somehow fundamental, whereas communities and populations are abstract contrivances.”¹²³ By reifying ecosystems (not to mention the SUPRA-individual Ecosphere), Rowe engages in a “matter of faith not scientific investigation. Naïve realism is the right of anyone who chooses to embrace that philosophy, but is not verifiable, and so is no position from which to organize a data-driven scientific inquiry.”¹²⁴ It goes without saying that this is a damning indictment of Rowe’s position by two of his peers.

Now, to the extent that either Wilber himself or his readers “reify” the levels composing his fourfold holarchical scheme, Wilber and his readers come in for the same kind of criticism. As I noted above, Wilber acknowledges that what shows up as a holon depends on the perspective from which and the context in which it is observed. At times, he speaks as if he were merely mapping a pre-given reality over against which he stands as a cognizing intellect. As both SES and BHE make clear, however, Wilber is very much informed by postmodern criticism of the representational or mapping paradigm. His fourfold holarchy is a tentative description, a map, if you will, drawn from the perspectives devised by hundreds of investigators. Wilber is not attempting to do science as such, but instead to draw upon the findings of many different disciplines in order to develop “orienting generalizations” that can help integrate many different cognitive, cultural, and social domains. He emphasizes that his broad, orienting map is nowhere near fixed and final:

In addition to being composed of broad orienting generalizations, I would say this is a book of a thousand hypotheses. I will be telling the story as if it were simply the case (because telling it that way makes for much better reading), but not a sentence that follows is not open to confirmation or rejection by a community of the adequate. I suppose many readers will insist on calling what I am doing



‘metaphysics,’ but if ‘metaphysics’ means thought without evidence, *there is not a metaphysical sentence in this entire book* [My emphasis].¹²⁵

Although in this essay I have criticized Rowe’s position, I respect his attempt to make sense of humanity’s relation to the wider world, with the aim of encouraging humankind to treat physiosphere and biosphere/organisms with respect, not only because they have moral status but also because humankind depends upon them for its very survival. Wilber, too, sympathizes with those like Rowe who are trying to construct wider and wider wholes, more integrative contexts to help people orient themselves—morally, emotionally, cognitively, spiritually—in the larger scheme of the Kosmos. By thinking that which has greater span is not only more fundamental but also more significant than that which has greater depth, we reduce humans and other organisms to mere *parts* of the ecosphere. In doing this, Rowe unavoidably aligns himself with the regressive tendencies of many deep ecologists. As I have argued elsewhere, deep ecology can be interpreted in a progressive way, one that is generally consistent with Wilber’s point of view.¹²⁶ I therefore encourage all deep ecologists to regard Wilber as an ally in their attempt to characterize the relationship between humanity and nature in a comprehensive manner.¹²⁷

**Endnotes**

¹ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001

² Wilber, *A brief history of everything*, 2000

³ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000

⁴ Salthe, *Development and evolution: Complexity and change in biology*, 1993

Although I use the terms *developmental* and *evolutionary* interchangeably in this essay, I agree with Stanley N. Salthe's contention that cosmic, planetary, and biological history reveals structural patterns that are not explicable in terms of the categories available to prevailing neo-Darwinist concept of evolution.

⁵ On the first page of his essay, Rowe describes Gus diZerega as an unfavorable critic of Wilber's work. This was true at one time, but after face-to-face discussions, diZerega and Wilber resolved most of their disagreements. In fact, diZerega is now a member of the Integral Ecology core team of Wilber's Integral Institute. diZerega and Wilber may not agree on everything, but diZerega's views can no longer be depicted in the way that Rowe depicts them.

⁶ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 1

⁷ On the topic of morphogenetic fields, see Sheldrake, *The presence of the past: Morphic resonance and the habits of nature*, 1995, to which Rowe also refers approvingly.

⁸ Zimmerman, "A transpersonal diagnosis of the ecological crisis, Ken Wilber in dialogue," 1998

⁹ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 7

¹⁰ Wilber, *A brief history of everything*, 2000, p. 252

¹¹ It remains to be seen whether the emerging field of biosemiotics will adequately model the interiority of complex systems, all of which involve "signaling" at virtually all of their various hierarchical levels. See the Biosemiotics home page: <http://www.gypsymoth.ento.vt.edu/~sharov/biosem/welcome.html>

¹² Wilber, *A brief history of everything*, 2000 pp. 105-106

¹³ Wilber, *A brief history of everything*, 2000, p. 106

¹⁴ Wilber, *A brief history of everything*, 2000, p. 254

¹⁵ Wilber, *A brief history of everything*, 2000, p. 255

¹⁶ Silos, *The politics of consciousness: Integral theory and Caribbean development*, n.d.

¹⁷ Wilber, *A brief history of everything*, 2000, p. 254

¹⁸ Wilber, *A brief history of everything*, 2000, p. 254

¹⁹ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 1

²⁰ Consult Edwards, "A brief history of holons," 2003, for a helpful historical discussion of the concept of holons and of how Wilber makes innovative use of it.

²¹ Koestler, *The ghost in the machine*, 1976. This book remains a very important contribution to many different domains of thought.

²² Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 2

²³ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 2

²⁴ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 2

²⁵ Wilber, *A brief history of everything*, 2000, p. 21

²⁶ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 2

²⁷ Allen, Starr & Thomas, *Hierarchy: Perspectives for ecological complexity*, 1982. Rowe claims that Allen and Starr argue "that all hierarchies (holarchies) are congruent because their common denominator is *information*." In my reading of Allen and Starr's book, however, I did not encounter this concept, nor is the term "information" included in the glossary or index.

²⁸ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 3

²⁹ Feibleman, "Theory of integrative levels," 1959; this remains a noteworthy essay.

³⁰ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 4

³¹ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 4

³² Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 4

³³ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 4

³⁴ Rowe, "Transcending this poor earth—à [sic] la Ken Wilber," 2001, p. 6

³⁵ Salthe, *Development and evolution: Complexity and change in biology*, 1993. In commenting on an earlier version of this essay, Stanley L. Salthe maintains that there is a necessary pattern in virtually all forms of evolution involving dissipative structures: from exuberant immaturity, to maturity, and finally to senescence as the



phenomenon (e.g., organism, ecosystem) becomes so overloaded with information that it can no longer cope with perturbations and heads toward destruction (and subsequent releasing/recycling of its components). On this universal developmental pattern, Salthe theorizes in terms of “infodynamics.”

³⁶ Owen, *Between reason and history: Habermas and the idea of progress*, 2002, is an excellent discussion of these issues.

³⁷ Owen, *Between reason and history: Habermas and the idea of progress*, 2002, p. 175

³⁸ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 5

³⁹ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, pp. 5-6

⁴⁰ Salthe, *Evolving hierarchical systems: Their structures and representation*, 1985. Wilber’s holarchy has much in common with Stanley N. Salthe’s distinction between scalar and specification hierarchy. An early version of this hierarchy is found on p. 167, figure 16, of Salthe’s book. See also Salthe, *Development and evolution: Complexity and change in biology*, 1993, and his essay, “Summary of the principles of hierarchy theory,” 2001.

According to Salthe, scalar hierarchy involves parts nested within holes, as in the case of Koestler and Wilber’s individual holons from subatomic structures to the human organism. Salthe’s cosmic “specification hierarchy” parallels Wilber’s cosmic holarchy. Salthe: {material world {biological world {psychological world {human psychological world. Wilber: Physiosphere gives rise to biosphere gives rise to noosphere gives rise to human interiority. Salthe’s specification hierarchy is based on “qualitative differences,” greater “intensional complexity,” and “emergence” of new properties elicited by a “final cause.” Salthe suggests (personal communication) that Wilber’s famous quadrant diagram tends to conflate scalar and specification hierarchies.

In my view, however, Wilber’s distinction between individual and social holons helps to avoid such conflation. The biosphere is a developmental classification that includes both individual and social holons. Individual holons are a nested hierarchy of parts and wholes, whereas—at least in important respects—social holons are communities constituted by members. The worldviews of Salthe and Wilber have a great deal in common, despite certain differences.

⁴¹ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001. Rowe offers no page number.

⁴² Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 6

⁴³ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 6

⁴⁴ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 6

⁴⁵ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 98

⁴⁶ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 7

⁴⁷ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 7

⁴⁸ Wilber, *A brief history of everything*, 2000, p. 185

⁴⁹ Wilber, *A brief history of everything*, 2000, p. 185

⁵⁰ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 383

⁵¹ Capra, *The web of life: A new scientific understanding of living systems*, 1996.

⁵² Wilber, *A brief history of everything*, 2000, p. 185

⁵³ Elsewhere, following suggestions made by Fred Kofman, Wilber describes two other kinds of wholes—heaps and artifacts—that are quite different from individual and social holons. Hence, Rowe is incorrect in contending that Wilber bases everything on an invalid extrapolation of one particular kind of part-whole relationship, that of the organism and its parts. See Kofman, “Holons, heaps and artifacts (and their corresponding hierarchies),” 2001.

⁵⁴ In a series of essays, Mark Edwards has argued that according to Wilber’s own scheme, an individual and a social holon each should have four dimensions, corresponding with what shows up when a holon is examined from the perspectives constituting the quadrants: individual interior, collective interior, individual exterior, and collective exterior. Wilber, however, generally indicates that the structures of individual holons are revealed by the perspectives constituting the two individually oriented quadrants, whereas traits of collective/social holons are disclosed by methods at work in the two collectively-oriented quadrants. Wilber maintains that social holons lack focused individuality and constitute the environment of individual compound holons. Whether Edwards is ultimately right, his careful and often insightful criticism merits further discussion. Edwards’ various essays and my summary of them are found in the Reading Room of the Integral World website <http://www.integralworld.net/>

⁵⁵ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, pp. 62-63

⁵⁶ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, pp. 71-72

⁵⁷ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 72



- ⁵⁸ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, pp. 62-63. In the first edition of SES, immediately following this sentence, “Its [the individual holon’s] environment we will call the social holon.”
- ⁵⁹ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 72
- ⁶⁰ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 72
- ⁶¹ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 73; Jantsch, *The self-organizing universe*, 1980. Wilber provides no page reference for the quotation.
- ⁶² Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 73
- ⁶³ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 79
- ⁶⁴ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 73
- ⁶⁵ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, pp. 87-88
- ⁶⁶ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 90
- ⁶⁷ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, p. 91
- ⁶⁸ Silberstein & McGeever, “The search for ontological emergence,” 1999. For a defense of emergence as an ontological phenomenon, and thus not merely an epistemological one, consult Silberstein, “Explaining consciousness: Convergence on emergence,” 2000.
- ⁶⁹ Wilber, *A brief history of everything*, 2000, p. 65
- ⁷⁰ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 7
- ⁷¹ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, pp. 7-8, emphasis in original.
- ⁷² Buege, “An ecologically-informed ontology for environmental ethics,” 1997
- ⁷³ Rolston, *Environmental ethics: Duties to and values in the natural world*, 1988. Also see Birch & Cobb, *The liberation of life: From the cell to the community*, 1981
- ⁷⁴ Warren & Cheney, “Ecological feminism and ecosystem ecology,” 1991, outlines some important ingredients of an integral ecology.
- ⁷⁵ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 7
- ⁷⁶ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 7
- ⁷⁷ Wilber, *A brief history of everything*, 2000, p. 184
- ⁷⁸ Wilber, *A brief history of everything*, 2000, p. 184
- ⁷⁹ Wilber, *A brief history of everything*, 2000, p. 185
- ⁸⁰ A version of the entire chart can be found in the frontispiece to BHE or on the home page of my course, Integral Ecology: www.cbr.tulane.edu/inteco.
- ⁸¹ Allen & Hoekstra, *Toward a unified ecology*, 1992, argue persuasively that there are six different criteria for defining ecology: the landscape, the ecosystem, the community, the organism, the population, and the biome/biosphere. These criteria demarcate different research domains. Dodson et al., have edited a handsome textbook, which describes these six versions of ecological science. Consult Dodson et al., *Ecology*, 1998
- ⁸² Callicott, “The metaphysical implications of ecology,” 1986
- ⁸³ Warren & Cheney, “Ecological feminism and ecosystem ecology,” 1991. Consult also Warren & Cheney, “Ecosystem ecology and metaphysical ecology: A case study,” 1993. For an insightful analysis of the problems involved in attempting to make ecological science the foundation for environmental philosophy in its metaphysical, epistemological, and ethical dimensions, consult de Laplante, *Environmental alchemy: How to turn ecological science into ecological philosophy*, 2004a. de Laplante discusses some very important issues that I cannot address within the limits of this essay, <http://opp.weatherson.net/archives/001445.html>, and de Laplante, “Toward a more expansive conception of ecological science,” 2004b.
- ⁸⁴ Hierarchy theory has grown enormously since the initial work done by Feibleman and Koestler. In addition to the book by Allen & Starr cited earlier, consult: Pattee, *Hierarchy theory: The challenge of complex systems*, 1973; Eldredge & Salthe, “Hierarchy and evolution,” 1984; Salthe, *Evolving hierarchical systems: Their structure and representation*, 1985; O’Neill, DeAngelis, Waide & Allen, *A hierarchical concept of ecosystems*, 1986; O’Neill, “Perspectives in hierarchy and scale,” 1989; Blitz, *Emergent evolution: Qualitative novelty and the levels of reality*, 1992; Ahl & Allen, *Hierarchy theory: A vision, vocabulary, and epistemology*, 1996; Gilbert & Sarkar, “Embracing complexity: Organicism for the 21st century,” 2000; Mitchell, *Biological complexity and integrative pluralism*, 2000.
- ⁸⁵ Here I gloss over the extremely difficult issue of the ontological status of “species”! Is “species” a term of classification? A reference to a population of similar organism that endures over time? A higher-order, more fundamental, and even more “valuable” aspect of reality than the individuals that instantiate them? To the last question, Callicott would answer “yes,” because what is real and important are species and systems of which they



are parts, whereas the individuals are constantly arising and vanishing, merely temporary instantiations of the enduring DNA code constituting the “essence” of the species.

⁸⁶ Buege, “An ecologically-informed ontology for environmental ethics,” 1997

⁸⁷ Buege, “An ecologically-informed ontology for environmental ethics,” 1997

⁸⁸ Rolston, *Environmental ethics: Duties to and values in the natural world*, 1998, p. 175

⁸⁹ Rolston, *Environmental ethics: Duties to and values in the natural world*, 1998, p. 174

⁹⁰ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

⁹¹ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

⁹² Rowe, “From shallow to deep ecological philosophy,” 1996

⁹³ Rowe, “From shallow to deep ecological philosophy,” 1996, pp. 4-5

⁹⁴ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

⁹⁵ Rowe, “From shallow to deep ecological philosophy,” 1996, p. 6

⁹⁶ Rowe, “From shallow to deep ecological philosophy,” 1996, p. 6

⁹⁷ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

⁹⁸ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

⁹⁹ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

¹⁰⁰ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

¹⁰¹ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 5

¹⁰² Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 2001, p. 8

¹⁰³ Rowe, “From shallow to deep ecological philosophy,” 1996, p. 6

¹⁰⁴ Rowe, “Transcending this poor earth—à [sic] la Ken Wilber,” 1996, p. 5

¹⁰⁵ Salthe, *Evolving hierarchical systems: Their structure and representation*, 1985, reviews objections to the individuality of ecosystems.

¹⁰⁶ Salthe, *Evolving hierarchical systems: Their structure and representation*, 1985

¹⁰⁷ Salthe, “Infodynamics, a developmental framework for ecology/economics,” 2003

¹⁰⁸ Salthe, *Development and evolution: Complexity and change in biology*, 1985, p. 174

¹⁰⁹ Salthe, *Development and evolution: Complexity and change in biology*, 1985, p. 8. To explore the idea of organisms as superorganisms, consult Depew & Weber, *Darwinism evolving: Systems dynamics and the genealogy of natural selection*, 1995

¹¹⁰ On the topic of ecofascism, consult Zimmerman, “L’écologie profonde (deep ecology) et l’écofascisme,” 1997b; “Ecofascism: A threat to American environmentalism?” 1997a

¹¹¹ Koestler, *The ghost in the machine*, 1976, pp. 237-242

¹¹² Koestler, *The ghost in the machine*, 1976, p. 233

¹¹³ Rowe, “The integration of ecological studies,” 1992

¹¹⁴ Rowe, “The integration of ecological studies,” 1992, p. 117

¹¹⁵ Rowe, “The integration of ecological studies,” 1992, p. 117

¹¹⁶ Rowe, “The integration of ecological studies,” 1992, p. 117

¹¹⁷ Rowe, “The integration of ecological studies,” 1992, p. 118

¹¹⁸ Salthe, *Development and evolution: Complexity and change in biology*, 1993, p. 224

¹¹⁹ Allen & Hoekstra, “Comment on Rowe’s article,” 1992a

¹²⁰ Allen & Hoekstra, “Comment on Rowe’s article,” 1992a, p. 118

¹²¹ Allen & Hoekstra, “Comment on Rowe’s article,” 1992a, p. 118. Wilber would speak of possibilities, agency, Eros, and rights.

¹²² Allen & Hoekstra, “Comment on Rowe’s article,” 1992a, p. 118

¹²³ Allen & Hoekstra, “Comment on Rowe’s article,” 1992a, p. 118

¹²⁴ Allen & Hoekstra, “Comment on Rowe’s article,” 1992a, p. 118

¹²⁵ Wilber, *Sex, ecology, spirituality: The spirit of evolution*, 2000, pp. 5-6

¹²⁶ Zimmerman, *Contesting earth’s future: Radical ecology and postmodernity*, 1994

¹²⁷ My thanks to Sean Esbjörn-Hargens, Stan Salthe, and Ken Wilber for suggestions that improved this essay. Remaining shortcomings are, of course, my responsibility.



REFERENCES

Ahl, Valerie & Allen, T. F. H. (1996). *Hierarchy theory: A vision, vocabulary, and epistemology*. New York: Columbia University Press.

Allen, T. F. H. & Starr, Thomas B. (1982). *Hierarchy: Perspectives for ecological complexity*. Chicago: The University of Chicago Press.

Allen, T. H. F. & Hoekstra, Thomas W. (1992a). Comment on Rowe's article. *Functional Ecology*, 6 (1), 119-120.

Allen, T. F. H. & Hoekstra, Thomas W. (1992b). *Toward a unified ecology*. New York: Columbia University Press.

Birch, Charles & Cobb, John B., Jr. (1981). *The liberation of life: From the cell to the community*. New York: Cambridge University Press.

Blitz, David (1992). *Emergent evolution: Qualitative novelty and the levels of reality*. Dordrecht, Netherlands: Kluwer.

Buege, Douglas J. (1997). An ecologically-informed ontology for environmental ethics. *Biology and Philosophy*, 12, 1-20.

Callicott, J. Baird (1986). The metaphysical implications of ecology. *Environmental Ethics*, 8 (4), 301-316.

Capra, Fritjof (1996). *The web of life: A new scientific understanding of living systems*. New York: Anchor Books/Doubleday.

de Laplante, Kevin (2004a). Environmental alchemy: How to turn ecological science into ecological philosophy. *Environmental Ethics*, 26 (4), 361-380.

de Laplante, Kevin (2004b). Toward a more expansive conception of ecological science. *Biology and Philosophy*, 19, 263-281.

Depew, David J. & Weber, Bruce H. (1995). *Darwinism evolving: Systems dynamics and the genealogy of natural selection*. Cambridge, MA: MIT Press.



Dodson, Stanley I.; Allen, T. F. H.; Carpenter, Stephen R.; Ives, Anthony R.; Jeanne, Robert L.; Kitchell, James F.; Langston, Nancy E. & Turner, Monica G. (1998). *Ecology*. New York: Oxford University Press.

Edwards, Mark (2003). A brief history of holons. Retrieved November 21, 2003, from <http://www.integralworld.net>

Eldredge, Niles & Salthe, Stanley N. (1984). Hierarchy and evolution. *Oxford Surveys in Evolutionary Biology*, 1, 184-208.

Feibleman, James K. (1959). Theory of integrative levels. *British Journal for the Philosophy of Science*, V (17), 59-66.

Gilbert, Scott F. & Sarkar, Sahotra (2000). Embracing complexity: Organicism for the 21st century. *Developmental Dynamics*, 219, 1-9.

Jantsch, Erich (1980). *The self-organizing universe*. New York: Pergamon Press.

Koestler, Arthur (1976). *The ghost in the machine*. New York: Random House.

Kofman, Fred (2001). Holons, heaps and artifacts (and their corresponding hierarchies). Retrieved March 12, 2004, from <http://www.integralworld.net/readingroom.html#FK>

Mitchell, Sandra D. (2003). *Biological complexity and integrative pluralism*. New York: Cambridge University Press.

O'Neill, R. V. (1989). Perspectives in hierarchy and scale. In Jonathan Roughgarden, Robert M. May & Simon A. Levin (Eds.), *Perspectives in ecological theory*. Princeton, NJ: Princeton University Press.

O'Neill, R. V.; DeAngelis, D. L.; Waide, J. B. & Allen, T. F. H. (Eds.). (2001). *A hierarchical concept of ecosystems*. Princeton, NJ: Princeton University Press.

Owen, David S. (2002). *Between reason and history: Habermas and the idea of progress*. Albany, NY: SUNY Press.



Pattee, Howard H. (Ed.). (1973). *Hierarchy theory: The challenge of complex systems*. New York: George Braziller.

Rolston, Holmes (1989). *Environmental ethics: Duties to and values in the natural world*. Philadelphia: Temple University Press.

Rowe, Stan (1992). The integration of ecological studies. *Functional Ecology*, 6 (1), 115-119.

Rowe, Stan (1996). From shallow to deep ecological philosophy. *The Trumpeter*, 13 (1). Retrieved March 1, 2004, from <http://trumpeter.athabascau.ca/content/v13.1/>

Rowe, Stan (2001). Transcending this poor earth—à [sic] la Ken Wilber. *The Trumpeter*, 17 (1). Retrieved March 1, 2003, from <http://trumpeter.athabascau.ca/content/v17.1/rowe.html>

Salthe, Stanley N. (1985). *Evolving hierarchical systems: Their structure and representation*. New York: Columbia University Press.

Salthe, Stanley N. (1993). *Development and evolution: Complexity and change in biology*. Cambridge, MA: MIT Press.

Salthe, Stanley N. (2001). Summary of the principles of hierarchy theory. Retrieved March 12, 2004, from http://www.nbi.dk/~natphil/salthe/hierarchy_th.html

Salthe, Stanley N. (2003). Infodynamics, a developmental framework for ecology/economics. *Conservation Ecology*, 7 (3). Retrieved March 10, 2004, from <http://www.consecol.org/vol7/iss3/art3>

Sheldrake, Rupert (1995). *The presence of the past: Morphic resonance and the habits of nature*. Rochester, VT: Park Street Press.

Silberstein, Michael (2000, April). *Explaining consciousness: Convergence on emergence*. Paper presented at Tucson 2000: Toward a Science of Consciousness, Tucson, AZ. Retrieved January 30, 2006, from www.etown.edu/philosophy/pdf/vergemerg1.pdf

Silberstein, Michael & McGeever, John (1999). The search for ontological emergence. *The Philosophical Quarterly*, 49 (195), 182-200.



Silos, Maureen (submitted). The politics of consciousness: Integral theory and Caribbean development. *Integral International Development Center Knowledge Base*, Integral Institute. www.integralinstitute.org

Warren, Karen J. & Cheney, Jim (1991). Ecological feminism and ecosystem ecology. *Hypatia*, 6 (1), 179-197.

Warren, Karen J. & Cheney, Jim (1993). Ecosystem ecology and metaphysical ecology: A case study. *Environmental Ethics*, 15 (2), 99-116.

Wilber, Ken (2000). *A brief history of everything* (Rev. ed.). Boston: Shambhala.

Wilber, Ken (2000). *Sex, ecology, spirituality: The spirit of evolution*. Boston: Shambhala.

Wilber, Ken (n.d.). On critics, integral institute, my recent writing, and other matters of little consequence: A Shambhala interview with Ken Wilber, part two. Retrieved April 5, 2004, from http://wilber.shambhala.com/html/interviews/interview1220_2.cfm/

Zimmerman, Michael E. (1994). *Contesting earth's future: Radical ecology and postmodernity*. Berkeley: University of California Press.

Zimmerman, Michael E. (1998). A transpersonal diagnosis of the ecological crisis. In D. Rothberg & S. Kelly (Eds.), *Ken Wilber in dialogue* (pp. 180-206). Wheaton, IL: Quest Books.

Zimmerman, Michael E. (1997a). Ecofascism: A threat to American environmentalism? In R. S. Gottlieb (Ed.), *The ecological community* (pp. 229-254). New York: Routledge.

Zimmerman, Michael E. (1997b). L'écologie profonde (deep ecology) et l'écofascisme. In C. Larriere (Ed.), *La crise environnementale*. Paris: INRA Editions.

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