

ALL THAT WE ARE: PHILOSOPHICAL ANTHROPOLOGY AND ECOPHILOSOPHY

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ABSTRACT: Ecophilosophers have long argued that addressing the environmental crisis not only demands reassessing the ethical aspects of human and nature relations, but also prevailing theories of human nature. Philosophical anthropology has historically taken this as its calling, and its resources may be profitably utilized in the context of ecophilosophy. Distinguishing between conservative and emancipatory naturalism leads to a critical discussion of the Cartesian culture/nature dualism. Marjorie Grene is discussed as a resource in the tradition of philosophical anthropology which enables us to avoid dualistic thinking and espouse an emancipatory naturalism by resisting reductionism and acknowledging the diffuse dependence of human being on natural processes. In order to fully explicate the conditions of human dependence upon nature it becomes necessary to define an appropriate approach to ontology. This critical ontology facilitates a stratified understanding of the place of humans in nature without lapsing into reductivism or post-Kantian constructivism. It provides a sounder basis than either alternative for motivating a many-sided ecophilosophical perspective on human being.

KEYWORDS: Philosophical Anthropology; Marjorie Grene; Critical Ontology; Ecophilosophy; Environmentalism; Political Ecology; Stratified Ontology; Naturalism; Reductionism; Anthropological Circle; Helmuth Plessner

We *are*, like other things, physico-chemical systems; we live, like other animals, bodily lives dependent on bodily needs and functions; but we *exist* as human beings on the edge between nature and art, reality and its denial.¹

1. ECOPHILOSOPHY AND PHILOSOPHICAL ANTHROPOLOGY

Voicing a view that has become common among environmentalists, Arran Gare argues in a recent essay that 'philosophical anthropology is central to ethics and politics' and that a genuine philosophical anthropology 'can orient people in their struggle for the liberty

1. Marjorie Grene, 'People and Other Animals', in *The Understanding of Nature: Essays in the Philosophy of Biology*, Dordrecht; Boston: Reidel Pub. Co., 1974a, pp.346-60, p.360.

to avert a global ecological catastrophe.² The ecosocialist Joel Kovel has argued that ‘the notion of human nature is necessary for any in-depth appreciation of the ecological crisis, and its lack is a sign of the crisis itself.’³ Ecoliteracy educator David Orr states that ‘[w]hatever a sustainable society may be, it must be built on the most realistic view of the human condition possible.’⁴ Other radical ecophilosophers as diverse as Arne Naess, Murray Bookchin, and Val Plumwood have consistently held that new views of human nature are vital to reinforcing the ecologically-informed conception, perception, and evaluation of nature that is called for in environmentalism.⁵ This is only a small sample of the many authors who suggest that a renewed, critical reflection on human being, or philosophical anthropology, is called for not only in order to motivate an effective ecological ethics and politics, but also to combat reductivist and dualist approaches to human being. The challenge today is to combine the anti-essentialist critical resources of post-Kantian constructivism with a naturalist’s appreciation of biophysical reality.⁶ What follows is an initial attempt to adequately characterize the problem and to suggest directions for a solution. Many thinkers concerned with this problem today consider themselves ‘naturalists.’ We should begin, then, by asking what *kind* of naturalism best motivates ecological consciousness.

2. ‘CONSERVATIVE’ AND ‘PROGRESSIVE’ NATURALISMS

Val Plumwood has spoken of disentangling ‘the liberatory roles of the concept of nature from the anti-liberatory ones,’ thereby distinguishing ‘progressive naturalisms’ from ‘conservative naturalisms.’⁷ In the words of another ecofeminist, conservative naturalisms ‘try to expand the domain of what is accepted as biological or natural and therefore inalterable, at the expense of what might otherwise be thought of as social and therefore subject to human alteration. Conversely, it is an emancipatory step to try to expand the realm of what convention holds to be social at the expense of what it defines as biological, precisely to open up possibilities for the transformation of existing social relationships.’⁸ This is an important and indispensable insight, and is shared by many purveyors of anti-essentialist, critical post-Kantian social theory. But in it the

2. ‘Philosophical Anthropology, Ethics and Political Philosophy in an Age of Impending Catastrophe,’ *Cosmos and History: The Journal of Natural and Social Philosophy*, vol. 5, no. 2, 2009, p.264.

3. *The Enemy of Nature: The End of Capitalism or the End of the World?*, 2nd ed., London, Zed Books, 2007, p. 107.

4. ‘The Problem of Sustainability,’ in *Ecological Literacy*, Albany, SUNY, 1992, p. 18.

5. Representative texts include: Arne Naess, *Ecology, Community and Lifestyle: Outline of an Ecosophy*, Cambridge, Cambridge University Press, 1993; Murray Bookchin, *The Philosophy of Social Ecology: Essays on Dialectical Naturalism*, 2nd ed., Montréal and New York, Black Rose Books, 1995; and Val Plumwood, *Environmental Culture: The Ecological Crisis of Reason*, London; New York, Routledge, 2002.

6. Compare Arturo Escobar, ‘Postconstructivist Political Ecology,’ in G. Woodgate and M. Redclift (eds.), *International Handbook of Environmental Sociology*, 2nd Ed., UK, Elgar Publishing, 2010. A book by the author on this topic is in progress, entitled *All That We Are: Human/Nature and Ecophilosophy*.

7. ‘Nature as Agency and the Prospects for a Progressive Naturalism,’ *Capitalism, Nature, Socialism*, vol. 12, no. 4, 2001, p. 6.

8. Janet Biehl, *The Murray Bookchin Reader*, London, Cassell, 1997, pp. 76-77.

problematic dualism between culture and nature lying at its foundation remains intact. The boundary between the fixed and the malleable may shift but the terms remain stable. This prevents us from sufficiently appreciating the complexity of the human condition so long as critical thinkers, in the process of combating conservative naturalisms, do not reflect on the persistence and influence of this dualism in all its forms. The problem for the nonreductivist, critical ecophilosopher is not only to find the right conception of the *continuity* of human being with 'nature' (however understood), but also to articulate a conception of the *unique* place of the human in nature. One interpretation of the nature/culture dualism is to consider it to be an ontological question of the identity of humans with nature or of their difference from it.

The question then is: which kind of ontology allows us to best characterize the *kind of continuity and difference* of the human within nature for the purposes of motivating political ecology? Three candidate types present themselves in a survey of some relevant literature. These are what I will call flat, hierarchical, and stratified ontologies. Flat ontologies include those which solve the problem of the nature/culture dualism by ignoring it or claiming that it has never existed. They make every entity an 'actant' in a 'network,' with no significant differences between rocks and presidents, dishtowels and trees. This solves some of the problems arising from the dualism, but by applying the same categories to all beings seriously fumbles on the question of difference. Hierarchical (or emergentist) ontologies aim to avoid classical reductionism in the sciences by instituting a concept of levels of reality punctuated by novel beings and principles in a series. These approaches give the impression of solving the problem of continuity and difference, but usually end up with a narrow concept of difference because they are still crippled by assuming that the *genesis* of the new is what is to be explained. Stratified ontology differs from the two previous by paying more attention to strata of categories rather than the series of entities hosted by them. It addresses the question of continuity and difference at the level of categories rather than things, and acknowledges genuine differences in kind, intransitivity, and irreducibility. This is not the place to elaborate these contrasting ontologies, but I will briefly contrast the latter two approaches in a closing section below. I'll suggest that a stratified ontology is best suited for the articulation of an ecological philosophical anthropology.

It is implicit in the approaches just mentioned that in order to articulate the place of the human in nature it is necessary to undermine the dualism that frames even the contrast between the emancipatory and conservative naturalisms just described. They do so with varying degrees of success. Here we should begin with the commonplace principle that wherever only two options or terms of contrast are on offer a prior multiplicity is usually being intentionally or unintentionally masked. Whatever kind of explanation one might wish to give of this tendency to think in dualistic terms, one can recognize its function clearly: to simplify an otherwise too-complex perceptual and interpretive array. A series of mental operations takes place in dualizing thought. There is a *radical exclusion* between the classes named, a *homogenization* of within-class individuals or phenomena, *denial and backgrounding* of one class in favor of the other, and *assimilation* of the Other to the One by

defining it as 'lack' in relation to the dominant One.⁹ This happens wherever dualisms are set up, creating an evaluative hierarchy and domination of one group by another. Postcolonial theory, critical race theory, feminism, Marxism, and other liberation theories address concrete forms of social oppression based on these dualisms.

But at a further level of abstraction it is not hard to see that dualism not only frames the interpretation of a phenomenon but frames the interpretation of interpretations themselves. Constructivists, thought of as one homogeneous group, think of naturalists as one homogeneous group, and treat the phenomena which they consider to be their respective totems, culture and nature, to be exclusively disjunctive as well. It is entirely acceptable today for a philosophical *critic* to submit the *concept* of nature to searching question, but to deny and background questions about what nature 'really is' and why it might matter to see ourselves as natural beings. Likewise, those of naturalistic persuasion will try to see human thought and behavior as determined by hidden natural forces, be they drives or selfish genes, and to deny and background questions about the historical, cultural, and political meanings and uses of naturalistic argumentation. Naturalists will assimilate culture by explaining it in terms of smallest bits, and constructivists assimilate nature by considering it to be soaked in the dye of cultural meanings. It is plain that this is just one more crude manifestation of our Cartesian dualistic legacy. We have to reject the 'either-or' of discourses which have the effect of blinding us to non-deterministic, non-reductive, 'ecological' accounts of the human place in nature. An emancipatory philosophical anthropology must maintain a critical stance toward such dualisms while still working with its categories, creating from these categories a view many-sided enough to maintain contact with and yet contest existing categorial frameworks.¹⁰ Critical ontology is an indispensable resource in this process.

The same dualisms frame debates about human nature as well as debates in environmental philosophy because they depend on the same fundamental ontological categories.¹¹ It is an important first step to set these categories free of their dualistic interpretation in both fields by means of a critical and reflexive practice. Second, it is just as crucial to re-establish and re-evaluate select categories through a process of testing and legitimation. Any such account depends upon a critical ontology which adequately addresses 1) the question of the levels of reality; 2) the question of human dependence on nature (frequently bound up with questions about identity and difference); and 3) the reflexive awareness of category choice, or relation between values and ontology. It does not belong to the current project to critically examine the whole

9. See Val Plumwood's *Feminism and the Mastery of Nature*, London, Routledge, 1993, Ch. 2, and *Environmental Culture*, op. cit., Ch. 5 for an extensive analysis of this logic.

10. Some in the social sciences have articulated such views as well, such as anthropologists Tim Ingold, *Perception of the Environment: Essays in Livelihood, Dwelling and Skill*, 1st ed., London, Routledge, 2000, and Arturo Escobar *Territories of Difference: Place, Movements, Life, Redes*, Durham, Duke UP, 2008.

11. 'This 'two-cultures' division of the field of knowledge into a culture-reductionist humanities versus a nature-reductionist science is a direct contemporary expression of the polarized and dualized choice of nature versus culture characteristic of western culture since classical times,' Val Plumwood, 'The Concept of a Cultural Landscape,' *Ethics & The Environment*, vol. 11, no. 2, 2006, pp. 116-150, p. 120.

plethora of environmental philosophies, their implicit or explicit ontologies, and their distinct concepts of human being in detail.¹² Here I will suggest that in the philosophical anthropology of Marjorie Grene we have an important and sound resource from which to draw inspiration for an examination of ecophilosophical characterizations of the place of the human in nature.

3. GRENE'S SOURCES: THE TRADITION OF GERMAN PHILOSOPHICAL ANTHROPOLOGY

In 'Analytic' philosophical circles Marjorie Grene is widely known as one of the first to make 'philosophy of biology' a household term, and her contributions to this field and the philosophy of science generally were broad and deep. In 'Continental' circles she is known for her historical studies of Aristotle, Descartes, Heidegger, and Sartre, and—having attended lectures of both Jaspers and Heidegger in 1932-33—was one of the first American interpreters of European philosophy for the English-speaking world. But what makes her especially unique among Americans is her early work on what is known as 'philosophical anthropology' in Germany, particularly in the text *Approaches to a Philosophical Biology* (1969), which combines her interests in philosophy of biology and the human condition.

'Philosophical anthropology' as a distinct philosophical approach emerged in Germany in the early twentieth century as the field which would help to generate synthetic knowledge of humanity by drawing from, but also grounding, burgeoning natural and social scientific approaches to human being. Its major proponents included Max Scheler, Helmuth Plessner, and (slightly later) Arnold Gehlen. A major effort of reconstruction and recovery of this tradition has taken place in Germany through the nineties and continues today, and its distinctive contributions have been detailed.¹³ In a context of neo-Kantian transcendentalism, vitalism, and phenomenology on one side, and positivist reductionism and logicism on the other, it was a philosophy of human being that wanted to preserve the notion that human beings were evolved living beings like others, and that biological and ecological reflections were fundamental for understanding the place of the human in nature. While sympathetic to biology or even practitioners of the life-sciences themselves, these thinkers opposed all simplistically deterministic, mechanistic, reductionist views, and took as their starting point the theoretical biology of Uexkull. Grene saw in these thinkers useful resources in her own battles against reductionism in philosophy and in the philosophy of science.

Contemporary writers in this tradition (such as Hans-Peter Krüger) see philosophical anthropology as a resource for supplementing 'the deficit of contemporary thought in the

12. The author does this in his current book project, *op. cit.*

13. See Joachim Fischer's *Philosophische Anthropologie: Eine Denkrichtung des 20. Jahrhunderts*, Freiburg and Munich, Alber, 2008. Here and elsewhere Fischer makes a sharp distinction between 'philosophical anthropology' in the broadest sense of a history of ideas about human nature, and philosophical anthropology as a distinct philosophical approach. Grene understands philosophical anthropology in the first sense in the essay mentioned above (see note 1).

domain of the philosophy of nature' and 'as a way of exiting the limits of the analysis of language and of hermeneutics.'¹⁴ Far from being a regression to a pre-phenomenological naive realism, it is a recovery of strategies which attempted to resolve the fundamental dilemma, still faced today, of all post-Kantian epistemology: the choice between humanist-constructivism and naturalist-realism. According to Fischer all of the authors of the movement share the view that human beings exist with a dual-aspect as both subjects and objects at once. But rather than endorse a dualistic metaphysics in order to explain this commonplace, they struggle to develop novel naturalistic categories to account for it. Plessner's category of *positionality* is used to understand living in contrast to nonliving things, and is raised to a higher power in the 'excentric positionality' of human beings, whereby one both is and has a body, but at the same time observes oneself 'at a distance' and is aware of doing so.¹⁵

Even up to her latest work Grene continued to appeal to these thinkers, particularly to Plessner, in order to oppose reductivistic and metaphysical views of human being.¹⁶ In the interest of emancipating human nature from oppressive biological reductivism, she shared with them the attempt to naturalize the a priori conditions of human experience and knowledge, creating novel assemblages of new and traditional categories in the process. Her view lends critical support to ecophilosophical projects by providing categories which allow us to see human beings as both continuous with and different from other organic beings, including in her concept of the natural the development of culture. She recognized an adequate philosophical anthropology would capture all aspects of the human condition at once, including the biological, psychological, ecological, social, cultural, historical, and political. This many-sidedness is particularly important in the problem-context of environmentalism. And it also demands a healthy dose of anti-reductionism, which Grene espoused from the start.

4. REDUCTIONISM AND PLURALISM IN PHILOSOPHY

Grene lists the contemporary tasks of any ontology worthy of the name: a non-reductivist, non-scientistic defense of realism; a refutation of nominalism, or the idea that only particulars are real; and an affirmation of 'ontological pluralism' and the 'demonstration that a one-leveled ontology is inadequate and incoherent.'¹⁷ These same tenets are also supported by many ecophilosophers. The anti-reductionism which sums

14. This is Andrea Borsari's interpretation in 'Notes on 'Philosophical Anthropology' in Germany: An Introduction', *Iris*, vol. 1, no. 1, 2009, pp. 113-129, p. 128. A good introduction to Krüger's views on the tradition and to his own Plessnerian perspective is 'Die Fraglichkeit menschlicher Lebewesen: Problemgeschichtliche und systematische Dimensionen,' in *Philosophische Anthropologie im 21. Jahrhundert*, Krüger and G. Lindemann (eds.), Berlin, Akademie Verlag, 2006, pp. 15-38.

15. Joachim Fischer, 'Exploring the Core Identity of Philosophical Anthropology through the Works of Max Scheler, Helmuth Plessner, and Arnold Gehlen', *Iris*, vol. 1, no. 1, pp. 153-170, p. 158. Krüger resists this oversimplification of Fischer and wants to preserve the unique perspectives of each. *Op. cit.*, pp. 23-38.

16. See *A Philosophical Testament*, Chicago, Open Court, 1995, *passim*.

17. 'Merleau-Ponty and the Renewal of Ontology', *The Review of Metaphysics*, vol. xxix, no. 4, pp. 605-625, pp. 606-609. See also her defense of 'the primacy of the real' in *Philosophical Testament*, pp. 113-126.

them up is reflected in the core of Grene's position, and is well-exemplified in a number of texts beginning from the start of her career. In the context of a discussion of different philosophical methods in 1937 she remarked that '[v]arious methods of description may touch the surface of the same world in different ways; no one goes 'deeper', none is more 'ultimate'...the relation is one of supplementation, not contradiction.' She continues:

The common assumption is that for any phenomenon or group of phenomena a plurality of descriptions can be executed, each of which has some justification in the observed nature of that phenomenon or group of phenomena. Different points of view, it is held, reveal different aspects of or patterns in the material of experience; but neither one attitude nor all of them together produce a description exhaustive of experience as a whole....A certain method of analysis may be preferable for certain purposes, but it has no unique appropriateness for all situations.¹⁸

She applied this pluralistic attitude expressly in her work in the philosophy of biology. In the essay 'Two Evolutionary Theories' (1958), she contrasts the theories of paleontologists G. G. Simpson and O. H. Schindewolf. For neo-Darwinist Simpson, 'types' (or 'species') were what needed to be explained with reference to a single, logically simple, automatically operating mechanism, while for Schindewolf 'type' was itself a primitive, axiomatic, self-evident category, with reference to which much could be explained about evolution. Her claim is that neither of the two theories is best for all purposes, and that they can each be used in application to both similar and different sorts of biological phenomena. In another later essay, 'Biology and the Problem of Levels of Reality' (1967), she is concerned to show just why biological explanation is not reducible to physical explanation, and especially to argue that the concept of 'form,' standard, or norm, is indispensable to evolutionary explanation.

When she speaks of physical in relation to biological explanations (and phenomena), she says that there is a 'hierarchical complementarity' at work, where the higher level depends for its *existence* on the lower, but the categories or regularities of the lower level do not exhaustively *explain* the order of the higher (dependence).¹⁹ In case after case she holds that we must acknowledge the necessary use of many sets of often irreducible categories in our explanations (complementarity), and that we must try to avoid reducing the plurality of categories to one dominant set (irreducibility).²⁰ These three principles of

18. Marjorie Glicksman, 'Relativism and Philosophic Methods,' *The Philosophical Review*, vol. 46, no. 6, 1937, p. 656 and p. 650 respectively.

19. There 'is a hierarchical complementarity, in which the lower level leaves open boundary conditions to be specified by the laws of the higher level. The higher level depends for its existence on the lower, but the laws of the lower level, though presupposed by, cannot explain the existence of the higher....' 'Biology and the Problem of Levels of Reality,' in *The Understanding of Nature*, pp. 35-52, p. 48. A very similar position was developed by Nicolai Hartmann throughout his career. See Nicolai Hartmann, *New Ways of Ontology*, trans. Reinhard Kuhn, Westport, Conn., Greenwood Press, 1975, and *Ethics*, 3 vols., trans. Stanton Coit, New York, Macmillan Company, 1932. The most complete presentation of his stratified ontology can be found in *Der Aufbau der realen Welt*, 3rd. ed., Berlin, de Gruyter, 1964. I draw on his ontology below.

20. '[W]here concepts of more than one logical level are necessary to the interpretation of a set of phenomena, we ought not to pretend to be operating on one level only.' 'Two Evolutionary Theories,' in *The Understanding of Nature*, pp. 127-153, p. 149. Along with Occam's Razor, we ought to adopt the opposite,

the irreducibility of categories, complementarity of different categorial schemes, and of layers of dependency in reality form the core of her general ontology.

In her work with Niles Eldredge on the biological context of human sociality they elaborate a double hierarchy of genealogical (reproductive) and economic (ecological) categories, because they refuse to reduce natural selection to sexual selection as do ultra-Darwinists. They argue that a great deal of activity performed by organisms has to do with the individual's coping activity in the world, with the exchange of energy between it and the environment, which may be thought of as an 'economic' or ecological relation.²¹ When ultra-Darwinism reduces all behavior or adaptation to reproductive behavior or adaptation, all of the economic or ecological adaptations or behaviors effectively disappear from view. The peacock's tail may be wonderfully effective in enticing a mate (a reproductive adaptation), but may be neutral with respect to whether it helps the peacock flourish effectively in its environment. The two sides of adaptation are closely related, but not identical. In hopes of capturing as many of the relevant phenomena of life as possible and employing the categories of various biological disciplines, the authors sketch both an ecological hierarchy of biological phenomena (including regional ecosystems, local ecosystems, avatars, and organisms) as well as a genealogical hierarchy (including monophyletic taxa, species, demes, organisms, and genomes). The distinctions developed also embody the principles of complementarity, irreducibility, and dependence. The sociality of all organisms, as they see it, arises through the integration of economic and reproductive activity. This is also the context for understanding the distinctiveness of human social life as well.

From this too-brief survey we can see the importance of three methodological principles for an emancipatory naturalism: 1) The principle of levels of categorial complementarity, or that different acceptable accounts can be given which reference different explanatory principles or categories; 2) the principle of the irreducibility of one assemblage of categories to another; and 3) the principle of existential dependence of one stratum of reality upon another. She brings these to bear in her own philosophical anthropology, as demonstrated in 'People and Other Animals' and other works.

5. BIOLOGICAL CONDITIONS OF CULTURE: DEPENDENCE AND THE ANTHROPOLOGICAL CIRCLE

Dualism cannot take hold where principles inimical to its emergence hold sway. This is the operational meaning of the pluralist principles outlined above. In the following discussion of various biological presuppositions of culture the aim is not only to

balancing principle for our explanations: 'that entities...or aspects of reality should not be *subtracted* beyond what is honest,' pp. 149-50. Much of her inspiration for this implicit notion of levels of reality and of explanation comes from Michael Polanyi, with whom she worked closely. See his 'Life's Irreducible Structure', *Science*, New Series, vol. 160, no. 3834, Jun. 21, 1968, pp. 1308-1312.

21. *Interactions: The Biological Context of Human Sociality*, New York, Columbia UP, 1992. Their's thus seems to be a way of negotiating the contrast between 'merological' and 'holological,' or 'population-community' and 'process-functional' approaches to ecology as well.

undermine any hope of reinstating a dualism of any sort and to promote a plural, stratified view of reality. It serves also to 1) establish the legitimacy of the concept of *diffuse dependence*, in contrast to linear or emergent causal dependence; and 2) articulate the ‘anthropological circle,’ whereby human attempts to give an account of their place in the world are themselves conditioned by that place and situated condition. In other words, we use categories to cope in the world, but categories (whatever their provenance) also often function in an a priori way in our perception of the world. Based on Grene I’ll suggest that categorization is really a form of human perception before it is a form of instrumental conception (which it also is).

The natural world, as Grene describes it, is stratified within itself. It is composed of, first, a fundamental stratum of physical systems; next, a level of living things nested within and dependent upon the first; third, a yet smaller stratum of living learners, including humans and many but not all animals; fourth, the class of *homo sapiens*, those living beings with the *potential* to achieve personhood. These strata are differentiated by their varied ‘relational order’ of elements.²² Organic life exhibits novel relational orders of physical elements, just as learners exhibit novel relational orders of nervous systems, and as *homo sapiens* expresses a new relational order of organic (thumb, lips, voice-box, posture, brain, etc.) and psychological (e.g., relative absence of instincts) characteristics, serving as necessary matrix for the personal and social orders which depend upon, and in some cases reciprocally condition them.²³ The three principles mentioned above are already in evidence here.

Humans are participants in personal and social worlds whose existence, certainly, and some of whose dynamics, probably, are dependent upon but not explicable through biophysical realities. Accordingly, Grene offers an account of the biological context of human sociality and culture which does not attempt to ‘reduce’ culture to biology but merely to reveal this dependence. This is the same strategy employed by her earlier German counterparts. This account of human uniqueness begins in human anatomy. What is most distinctive about human anatomy is the often-observed fact of its *generalization*, rather than of its specialization for a specific environment. ‘This is the paradox in human evolution: our most conspicuous specialization is the loss of specialization.’²⁴ Anatomical features that can be seen as prerequisites for life in a human world include bipedal locomotion and the big toe; the opposable thumb and overall anatomy of the hand; a larynx specialized for complex speech in a way like no other; and of course cerebralization—larger, differently proportioned, asymmetrically localized brains. Walking upright frees the hands in a way that knuckle-walking and tree-swinging does not. Upright posture also made possible the elongation of the neck and development of the pharynx or voice-box. Our senses are much like those of chimpanzees: sensitive hands, excellent ears and eyes with color vision, poor noses. Of

22. As she points out in *A Philosophical Testament*, this model can be compared to Merleau-Ponty’s ‘physical,’ ‘vital,’ and ‘human’ orders in *The Structure of Behavior*, Pittsburgh, Duquesne University Press, 1983. I’ll discuss her concept of ‘relational order’ below. Her discussion of stratification no doubt derives from Polanyi, *op. cit.*

23. Grene, *The Understanding of Nature*, pp. 352-354.

24. Eldredge and Grene, *Interactions*, p. 179. This was also a theme of the German anthropologists.

course the areas of the brain concerned with language have developed in tandem with the larynx and other speech apparatus. It is crucial to see that these anatomical features are precisely what allow one to ground culture, or the world of persons and the social world, in nature.²⁵

The tendency is to resolve this macro-dependence into some type of causal determinism from below. If development of culture depends on anatomy, and anatomy is caused by genes, then genes ‘explain’ culture. But this chain of reasoning blinds one to the various levels and kinds of dependency relations that exist in the natural world. In accord with her anti-reductivist principles (as well as with a voluminous phenomenological literature) we have to insist that this categorical level of the human body is irreducible in its own right. What Grene evidently expresses here is the brute existential dependence or *diffuse dependence* of human social life and culture upon the biophysical reality of bodies and, by extension, upon the ecologies which they inhabit. This is not merely a trivial ‘material’ dependence, but is genuinely existential. Causal determinisms veil this diffuse dependence by understanding nature’s agency only in terms of linear channels of causation. This is an important point for ecological perspectives which have been concerned to articulate a deeper sense of human dependence upon the natural world. The discussions of so-called ‘natural capital’ in the discourses of sustainability draw our attention to the ways in which humanity depends upon ‘ecosystem services’ and natural resources for its maintenance, reproduction, and survival. It is at this macro-level that discussions of dependence are significant for human ecology, not at the level of genomes, brain modules, or thermodynamics.

Grene also inserts the anatomical peculiarities above into a developmental perspective. A period of ‘social gestation’ is necessary for human development in addition to the forty week period of intrauterine gestation. Children have to *learn* early on to acquire those characteristics that adults of our species seem to innately possess: upright posture and walking, language use or symbolic activity, and reasoning about actions. This period of ‘premature’ social learning is unique in nature, and absolutely necessary for the development of what we would consider a mature human being. Humans reach sexual maturity relatively late in comparison to other species, facilitating a period of intensive apprenticeship to the human condition and ‘gradual assumption of responsible personhood.’²⁶ One might say that—if we call language use and reasoned action necessary aspects of human cultures—that enculturation is part of our ‘natural’ developmental cycle. All of the structures necessary for the performance of cultural feats, such as larger brains, opposable thumbs, laryngeal development, and pelvic shaping,

25. I intentionally avoid saying culture ‘emerges from’ nature, because I think the genetic bias, which I discuss below, perverts one’s ability to take stock of the structure of the world unprejudiced by genetic assumptions. Grene too discusses structure rather than genesis here, stratification rather than a continual series of forms.

26. Eldredge and Grene, *Interactions*, p. 183. Compare: ‘to be a person is an achievement of a human organism mediated by participation in a culture. Or to put it still another way, a developed human being is at one and the same time a *personalization* of nature and an *embodiment* of culture. Conversely, his existence as a person expresses his culture through his participation in it.’ Grene, *The Understanding of Nature*, p. 354.

begin to form embryonically. That is, the anatomical and developmental conditions of human life form the supporting structure for the cultural human condition. Since without culture we would lack a 'human nature' altogether, it seems reasonable to conclude that culture is natural. Culture is not something 'added on' to a creature which could otherwise exist without it. Grene sums all of this up in the following passage:

The whole structure of the embryo, the whole rhythm of growth, appears to be directed to the emergence of a culture-dwelling animal—an animal not bound within a predetermined ecological niche like the tern or the stag or the dragonfly or even the chimpanzee but, in its very tissues and organs and aptitudes, born to be *open to its world*, or, better, open to a world within a world, to be able to accept responsibility, to make the traditions of a historical past its own, and to remake them into an unforeseeable future.²⁷

This is an account of the way in which uniquely human characteristics such as symbolic activity or responsible action have some roots in evolutionary soil, but does not mean that the content of that symbolic or responsible activity (meanings and values) is explicable in terms of evolutionary discourse alone. Grene adopts three principles of philosophical anthropology from Plessner in order to encapsulate the dimensions of the intertwining of nature and culture. These principles are *natural artificiality*, *mediated immediacy*, and *utopian standpoint*. Each of these phrases is meant to confound Cartesian dualism. If 'natural,' 'immediacy,' 'place' are aligned on one side, and the 'artificial,' 'mediacy,' and 'no-place' on the other, then we have the traditional dualism. They are a way of summing up the talk of dependence above and looking ahead to the idea of the anthropological circle below.

The principle of *natural artificiality* means, in terms of anatomy and development, that human beings are naturally bound to be cultural beings. Human beings cannot be considered to be animal 'first' with culture 'added on later.' As we have seen, as embryos we are beings formed in such a way as to need cultures and social life in which to move and live. From this point of view there is no separating or precipitating out the natural from the cultural aspects of human being, for they are interpenetrating and mixed from the very start. Nature and culture are not two causal powers vying for the greater part in the determination of human behavior. What 'natural artifice' means is that we are beings who must invent tools, perform rituals, create art, and develop symbol systems in order to cope with the world and flourish in it. Natural, personal, and social worlds are permeated by the symbolic and evaluative systems which define the human place in the world. Grene thinks that this principle has a primarily existential significance, for it defines the way that humans invariably exist in the world.

The second principle has an epistemological meaning. The principle of *mediated immediacy* refers to the way in which human perception is shaped, conditioned, motivated, or informed by the categories and languages that we acquire and employ as part of enculturation. Humans have no 'pure perception' of the world without the influence of such categories or filters. 'We sense the world directly, as all animals do, but even our

27. Eldredge and Grene, *Interactions*, pp. 182-183.

immediate perceptions are mediated by the symboling activities of a human culture.²⁸ She continues:

From the beginning, a baby's seeing and hearing are saturated with human meanings, and the meanings of natural objects, what they afford the perceiver, are immeasurably enriched by the human texture in which they come clothed. Perception itself is enculturated. Naming of objects and of pictures of objects may be almost simultaneous, and children may learn the names, for example, of zoo or farm animals, before they see those animals themselves. Thus our direct perception of the things and events around us is mediated by human customs and devices.²⁹

But this means that categories themselves (as part of language generally) are part of the process of human perception and not only conception (to use a timeworn epistemological distinction between intuition and concept). And if categorization is perception, then we must re-evaluate the status of our ontological categories from the perspective of anthropology just as much as we have to revise our ontologies of human being.

Finally, Grene discusses Plessner's third anthropological principle, that of the *utopian standpoint*.³⁰ As she interprets it, the utopian principle indicates that human beings are never satisfied with the existing state of things, and always demand something better (a 'utopia'). This is the very core of criticism as she sees it: 'the power of denying *what is* in favor of what we believe *ought to be*, of demanding *what is not* in defiance of *what is*' (my emphasis). She even argues that rationality is better understood as the power of criticism, of saying 'no' to what is, rather than as the grasp of eternal truths. 'Man's so-called rationality resides, not in his grasp of some transcendent truths, but in his power to doubt, criticize, to ignore or deny the actual in favor of the barely possible, if not the impossible.'³¹ But what this entails is that human beings have purchase on a realm of values which orients their strivings. There would be no desire for a 'better world' if we hadn't felt violations of values and tugging demands to envision alternatives to what is.

These principles in combination express an important insight. Up to now we've thought about how to categorize the human, but now we see that there are conditions of our own categorization, or an 'anthropological circle.' In other words, even if we are for the most part 'that being who asks about its own being' (Heidegger), both the capacity to question and the articulation itself are multiply conditioned by forms of natural and cultural dependence. As persons we live in a cultural world replete with significance and values vying for our allegiance. These implicit valuing are what align our strivings. In accord with these strivings, we capture what we can of the multiplicity of the real in our nets of categories, including ourselves. 'The hermeneutical circle in which we find ourselves, and through which we are in contact with the world, *both* enables us to gain, criticize, refine, and elaborate knowledge about things and events within the world

28. *Interactions*, p. 185.

29. *Ibid.*, p. 185.

30. *The Understanding of Nature*, p. 359.

31. *Ibid.*, 359.

and limits the forms of such knowledge through the contingent givens of our habits of thought as well as through the contingent forms that nature itself has acquired.³² This is what it means to say that categories themselves are organs of perception.

Human being, as Being-in-a-world, in other words, is possible only as an achievement of a certain kind of living being, with certain organic endowments and a certain kind of biological as well as social environment. *Animalia* are a necessary presupposition of *existentialia*....What we have to recognize is the place cleared *within* nature for the possibility of the human, that is, historical, or historicizing-historicized, nature.³³

The perspective offered by the anthropological circle is double. On the one hand it affords the recognition that the most authentically human characteristics—not just their ‘material’—are radically dependent on nature for their existence (and continued maintenance). On the other it opens the way for a pluralist realism of stratified reality beyond the worried, conservative strictures of determinism or the unanchored musings of constructivism. It is both the fruit and the root of critical ontology. An example of the circle at work is to consider ‘nature’ to be as much an ‘interactive kind’ when applied to the human condition as are ‘gender’ or ‘race.’ As Ian Hacking notes, ‘calling a quark a quark does not matter to the quark,’ but classifying someone as a member of a certain race does matter to the person so classified. As a result of the classification, the person’s self-understanding is affected, which in turn may change the meaning of the category and perception of realities. In current ecophilosophies much is made of whether humans are considered to be a part of or apart from ‘nature,’ and it matters a great deal how nature is conceived currently and has been understood historically. Thus the historical hyperseparation of human from nature matters to a person, and to a community of persons. If by ‘nature’ one connotes materialist reductivism and determinism it is one thing to be a part of it, if a fecund, diverse, and creative whole it is quite another. The observation that ‘categories are organs of perception’ conjoined to this example of ‘interactive kinds’ may lead the reader to the conclusion that categories are subjective and arbitrary. In the next section I’ll explain why this is not the case.

6. CRITICAL ONTOLOGY

In Kant as in much post-Kantian philosophy ‘critique’ may be defined as the process of explicating the conditions under which knowledge of objects is produced. For Kant these conditions were ‘inside’ the subject as forms of intuition and categories of the understanding, the universal and necessary presuppositions of knowledge claims. For post-Kantians the process of unearthing ‘universal and necessary’ conditions which function in an a priori way extends beyond the interior of the subject to include, for example, history and political economy, will-to-power, the play of libido or the

32. My emphasis. Grene, ‘Perception, Interpretation, and the Sciences’, in D. Depew and B. Weber eds., *Evolution at a Crossroads: The New Biology and the New Philosophy of Science*, Cambridge, MIT Press, 1989, p. 10.

33. Grene, ‘The Paradoxes of Historicity’, in Brice Wachterhauser (ed.), *Hermeneutics and Modern Philosophy*, Albany, SUNY Press, 1986, pp. 168-189, p. 185.

unconscious, and after the ‘linguistic turn’ all of the determination of thought by language that one can find from Whorf to Wittgenstein to post-structuralism.

But for both Kant and the post-Kantians critique is never exhausted in this ‘negative’ process. Uncovering the conditions of the production of a knowledge claim does not automatically falsify it. That knowledge claims are produced by situated knowers is undeniable, but it is a mistaken inference that the fact of situatedness therefore invalidates the content of the claim. Evaluating the legitimacy of the claim is the task of critique’s complementary procedure, called by Kant ‘deduction,’ which explains the speaker’s justification to make it even given her conditioned nature. The fact that Kant thought a defense of our right to use categories of the understanding was necessary at all indicated his recognition that the categories of thinking and those of being do not coincide. In this he agreed with the skeptics and empiricists. But the need for a defense of the use of categories leads us to a second point. Kant composed the critique in order to obliterate ‘dogmatic metaphysics,’ but not all metaphysics or ontology. What his retention of the problematic Idea of the thing-in-itself indicates is that there is a world on which thought depends for its existence. Critique deflates claims where it reveals potential or real bias, but it also inflates them by referring to a world beyond which conditions or feeds thought, indifferent to whether it can be known or not.

Critical ontology rejects objectivist metaphysics and epistemology and adopts a ‘minimal realism’ by arguing that categories give human beings a ‘partial view’ of what there is.³⁴ Categories express and articulate ‘what there is’ relative to human purposes and value-saturated interests. Like criticism generally, critical ontology accepts the conditioned nature of knowing, but unlike some forms of it rejects relativism. Even if assemblages of categories are several and varied, they are relative to human interests and values, and these are understood *to be limited*. It advances a pluralism which accepts multiple and diverse ways of dividing the world, but asserts that some ways are better than others relative to sets of instrumental, epistemic, aesthetic, and moral values which orient evaluation.³⁵

Critical ontology is ‘categorical.’ As both Hartmann and Heidegger claim, categories are ‘fundamental assertions about being as such,’³⁶ and these assertions take the form

34. The phrase ‘minimal realism’ comes from philosopher of science Helen Longino, *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*, Princeton, N.J., Princeton University Press, 1990. My views on the issue of realism are also influenced by Nicolai Hartmann and Grene, as well as John Dupré, *The Disorder of Things: Metaphysical Foundations of the Disunity of Science*, Cambridge, Mass., Harvard University Press, 1993; Ian Hacking, *The Social Construction of What?* Cambridge, Mass., Harvard University Press, 1999; and Donna Haraway, ‘Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,’ *Feminist Studies*, vol. 14, no. 3, 1988, pp. 575-599. They all teach that critique and realism are not mutually exclusive.

35. That is, an axiology is necessary correlate—or presupposition—of such an ontology. Inspired by Scheler and Hartmann on the Continent, as well as Taylor, I have made a start at presenting an axiological ethics in the context of a discussion of Joel Kovel’s ecophilosophy in ‘From Ecological Politics to Intrinsic Value: An Examination of Kovel’s Value Theory,’ *Capitalism Nature Socialism*, vol. 21, no. 3, 2010, pp. 81-101.

36. Hartmann, *New Ways of Ontology*, p. 13. Compare Martin Heidegger, *Being and Time*, trans. MacQuarrie and Robinson, New York: Harper and Row, 1962, pp. 70-71.

of categories. ‘Categories are simply the tacit presuppositions which we make in our conception, interpretation, and judgment about the given.’³⁷ I understand ‘fundamental’ to mean ‘indispensable for understanding.’³⁸ Both Heidegger and Hartmann tried to develop a ‘fundamental ontology’ in part to define philosophy in contrast to the sciences. But today it is not a matter of discovering the ‘fundamental’ in any absolute or universal sense, but of seeing ontology rather as ‘profoundly superficial,’ to use an oxymoronic phrase in the spirit of Plessner. Philosophical anthropology and category research teaches us that categories are ‘at the surface,’ at the level of perception, but for this very reason they have a profound effect upon our conception and evaluative relation to the world.³⁹ For this reason, categories may be seen as ‘constitutive principles’ of experience and of explanation. A constitutive principle is something that we use implicitly or explicitly that shapes our perceptions and experience of the world and of ourselves. Categories often play the role of conditions or background assumptions in affecting the selection of what is significant or meaningful in an experience. I understand the process of using and disclosing concepts which may function as ontological categories to be historical, unending, contestable, fallible, and this entails that pluralism and multiple voices are obligatory. Categories are irreducible or indispensable constitutive (and *a fortiori* regulative) terms of explanation or articulation. Categorial ontologies are local and experimental.⁴⁰

7. STRATIFICATION AND GENESIS

I call both standard nomothetic-causal explanations as well as hierarchical emergentist views ‘genetic,’ and reserve the term ‘stratified’ ontology for the view suggested here. Emergentism attempts to explain the genesis of novelty with reference to a single fixed frame of categories and of value, often making the classical appeal to a universalizing view from nowhere, asserting a cumulative arrangement of granular units which sometimes also reflects an old dialectic of wholes and parts. Examples include classical views such as Lloyd Morgan and Spencer, but also Schelling and other process thinkers, as well as

37. Nicolai Hartmann, ‘Ziele und Wege der Kategorialanalyse,’ *Zeitschrift für philosophische Forschung*, vol. 2, no. 4, 1948, pp. 499-536, pp. 500-501.

38. In addition to observation and experience of existing realities, categories may be arrived at by quasi-Kantian ‘transcendental deductions.’ Charles Taylor argues this in ‘The Validity of Transcendental Arguments,’ in *Philosophical Arguments*, Cambridge, Mass., Harvard University Press, 1995, pp. 20-33. I say ‘understanding’ rather than ‘explanation’ to indicate that we often do not simply seek causal explanations, but seek to satisfy other value-oriented wants through the stories we tell about ourselves and the world.

39. They are profound in a cognitive sense and function, but also because they are often highly charged *evaluative* terms. George Lakoff is a good source for considering the relations between ontological categories and critiques of objectivism in cognitive science. See his *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*, Chicago, University of Chicago Press, 1987.

40. My view of categorial ontology may be profitably compared with that of Roberto Poli, with whose general approach to ontology I am in agreement, but with the details of which I often disagree. See, for instance, ‘The Basic Problem of the Theory of Levels of Reality,’ *Axiomathes*, vol. 12, 2001, pp. 261-283; and ‘Ontology: The Categorial Stance,’ in R. Poli and J. Seibt (eds.), *TAO-Theory and Applications of Ontology, Vol 1, The Philosophical Stance*, Springer, 2010.

Stanley Salthe's developmental systems ecology. Stratified ontology does not begin with the emergence of novel *objects* themselves but with the categories discursively employed to understand them. This entails acknowledging multiple frames, interests and situated knowers. I stated above that the problem for ecological philosophical anthropology is not simply to demonstrate the unity of humans with nature, but to articulate both continuity and discontinuity. Here I briefly contrast an emergentist ontology with a stratified one to show why emergentism fails to properly understand difference, and is for this reason also complicit in the oblivion of the important notion of humanity's diffuse dependence upon nature when it comes to ecopolitical issues.

Genetic relations have the tendency to actually veil *dependence* in this sense because the relation is thought only in terms of punctual causal efficacy (presence) rather than diffuse enduring maintenance (duration). Once we have come to exist through evolutionary development, it seems, our *continuity* with nature is exhausted, our manifold connections with the material and natural world are truncated. Thereafter we live completely in a social world, *denying and backgrounding* our dependence upon nature, except in just those cases where special natural agencies are invoked to 'explain' the psychological, social, cultural, and political behavior of humans qua objects of inquiry. Whether it is reference to smallest bits such as selfish genes, or universal laws such as the Second Law of Thermodynamics, genetic explanation misses the radical, generalized dependence of humanity on the material world because both are phenomena which escape the human scale of everyday provisioning and reproduction. Emphasizing genetic relations blinds one to any other sort of dependence aside from canalized determination, or at best, systems of determinations. Reductivism asserts that there can be only one kind of relation between 'lower' and 'higher' phenomena (causal, impact determination), while emergentism or holism adds that there can also be a determination of the lower within the higher system. Both background the significance of existential dependence, sustenance, maintenance, and reproduction. Categorical ontology, as opposed to genetic explanation, allows us a better view of dependency relations, as well as of human continuity and discontinuity with the natural world.

To better see this difference we can begin with some general premises here, as stated by Hartmann.

Man...is conditioned to the highest degree by the whole hierarchy of real forms. His being in the world presupposes the being of the world. Without it he cannot live. The world, on the other hand, can very well exist without him. The organic world...is a presupposition of his existence. And since...the organic world has the inorganic one for its presupposition, it must further be asserted that all of nature from the bottom up to the living beings akin to man is a condition of his existence.⁴¹

He understands 'presupposition' here in terms of layers of categories articulating the phenomena of an ontological stratum but not mapping them without remainder. Each layer presents a coherent but not closed assemblage of peculiar categories employed as constitutive principles. There is a stratum of material or physical reality, including

41. Hartmann, *New Ways of Ontology*, pp. 35-36.

for example the categories of corporeality, space, time, process, condition, substance, causality, reciprocity, dynamic structure and equilibrium, entropy, the Second Law of thermodynamics, gradients, dissipative structures, and so on. 'Vital' or organic beings embody a peculiar organic structure defined in terms of adaptability, purposiveness, metabolism or self-regulation, self-restoration, reproductive fitness, hereditary constancy and variation, genome, niche, avatar, and ecosystem.⁴² Thanks to the work of animal researchers and animal rights proponents it is widely recognized that many types of animals possess a mental life. This 'psychic' stratum includes awareness, unconscious processes, pleasure and pain, conditioned learning, habit, associative memory, communication, emotional response, problem-solving intelligence, and the categories of rigid social relations. While it is obvious that many animals are intelligent (such as ravens, dolphins, and nonhuman primates), it is less clear whether they have any capacity to reflect on their needs and desires in an evaluative way. Charles Taylor identified this capacity to strongly evaluate 'first-order desires' (organic needs or inclinations) as one of the most characteristic differences between nonhuman animal and human being.⁴³ This capacity is closely bound up with human language, and articulating our motivations for action in a language of qualitative contrasts (or in terms of a value-assemblage) is primarily how we understand that action and ourselves to be ethical or not. We can include the aforementioned capacity to strongly evaluate in the stratum of 'eccentric' capacities. These include the power of conceptual thought, knowledge acquisition, ideal relations, moral evaluation and values, symbolic communication (signification), teleological reasoning, personality, and all of the categories of the complex and variable social relationships evinced by humanity. Historical reality and culture form the immediate context or 'world within a world' for the exercise of these eccentric traits.

The words material, vital, psychic, and eccentric name strata, domains, or regimes of categories. The claim of the categorial ontologist is that we cannot make sense of the phenomena at each respective level unless we use categories such as those listed, for they are indispensable or irreducible for understanding. Hartmann adopts a relatively rigid view of the stacking of these layers of categories, in part because he wants to preserve the ideal of the disinterested view from nowhere. Because I reject this classical idea and embrace situated knowledges, I believe we can be more flexible about the arrangement and relations between strata. To take his own geological metaphor further: it is in one sense entirely contingent in what order geological strata are deposited, and volcanic eruptions, plate collisions, erosions and other disturbances can upset any neat distribution of layers. For the purposes of political ecology, it is important to recognize the existential dependence of higher on lower, but also autonomy of higher in relation to the lower.

This is not a genetic relation, but one of *conditioning*. 'Essential for ontology is the principle involved, that here is an irreversible conditional relationship. The lower tiers

42. This can be further refined to a dual set of categories, one 'genealogical' and one 'economic,' in order to better distinguish between the discursive regimes of molecular biology and ecology, where needed. See Eldredge and Grene, *Interactions, passim*.

43. 'What is Human Agency?', in *Philosophical Papers I: Human Agency and Language*, Cambridge, Cambridge UP, 1985, pp. 15-44.

of being are independent of the higher ones and do not need them, but the higher are dependent on the lower.⁴⁴ Hartmann does not interpret this dependence narrowly as causal determination: ‘The dependency in question does not imply that all organic life is to be explained in terms of physical material relations, or all psychic and spiritual life in terms of organic conditions. *How far the dependence ‘on that below’ reaches, what it covers, how much and what can be explained by it—all this is quite another question.*’⁴⁵ The basic form of the relation between higher and lower phenomena as well as categorial strata themselves is that of ‘superimposition’ (Überbauung).

He does not exclude the possibility of superordinate forms ‘superinforming’ (Überformung) lower forms through types of emergent conditioning, and in fact holds that this is the more common relation observed within the organic, and between the organic and inorganic domains. Instead of answering the question about how the more complex comes from the more primitive, some forms of emergentism affirm the reality of the more complex through its *superinforming* of the lower. Environmental philosopher Holmes Rolston III puts it this way: ‘The atom is real because that pattern shapes the behavior of electrons; the cell because that pattern shapes the behavior of amino acids; the organism because that pattern co-ordinates the behavior of hearts and lungs; the [ecological] community because the niche shapes the morphology and behavior of the foxes within it. Being real requires an organization that shapes the existence and the behavior of members or parts.’⁴⁶ Provided one does not generalize this and assume that all relations of higher and lower are those of superinforming wholes to parts it is an admissible principle. The initial inspiration of emergentism was to justify the observation of genuine difference and novelty at the level of the organic in contrast to the inorganic world, as well as minds in relation to bodies. While it has succeeded in highlighting one form of categorial novelty or difference, it has also tried to generalize its findings by applying the same insight to the human and social realms. It focuses on one kind of difference just as causal accounts focus on one type of continuity. But focus on particular forms or structures and their emergent reality leaves us just as oblivious to the diffuse existential dependence of the higher forms on the lower as do other genetic views.

44. Hartmann, *New Ways of Ontology*, p. 36.

45. *Ibid.*, my emphasis.

46. ‘The Value of Nature and the Nature of Value’, in *Environmental Ethics: An Anthology*, Holmes Rolston III and Andrew Light eds., Oxford, UK, Wiley-Blackwell, 2003, p. 149. Compare Robert E. Ulanowicz, ‘Life after Newton: An Ecological Metaphysic’, in *The Philosophy of Ecology*, Golley and Keller (eds.), Athens, University of Georgia Press, 2000, pp. 81-100, and T. F. H. Allen and T. Starr, *Hierarchy: Perspectives for Ecological Complexity*, Chicago, Chicago UP, 1982. The comparison is complicated by the fact that ecological hierarchy theory uses the temporal measures to distinguish between higher and lower holons. Holons with slow behavior are at the top while faster-behaving holons are at the bottom. This makes it easy to see that ‘lower holons in the hierarchy are to various extents constrained by higher holons with which they communicate. Higher holons are to various extents the environment of lower holons. While constraint does not determine the endogenously given behavior of lower holons, it does give that behavior a context and boundary conditions,’ p. 37. A thorough comparison of hierarchy theory in its various forms and the stratified ontology presented here is warranted. The general distinction between genesis and stratification should be clear enough.

Critical ontology is a way of determining just how much continuity and difference, unity and multiplicity there is in the world, as opposed to the rationalistic desire to impose unity through use of one type of category.⁴⁷ Without a stratified view it is impossible to make a fair assessment of continuity and difference in humanity as well as in the world.

If we only think in terms of a difference of *structures*, say rocks, plants, animals, human being, society, it is impossible to determine the unique in them because we submit the hierarchy of structural units to a single frame of reference or set of categories. An example of emergentist ecology can be found in Stanley Salthe's synthetic work to produce a new philosophy of nature for our era. He views the task of the new nature philosophy to be one of 'making scientific knowledge into an intelligible system, one which enables us to make sense of the world and our lives in it.'⁴⁸ In his view one has to give a prominent place to physical forces in explanations, and he employs the categories of thermodynamics to account for the activity of phenomena from atoms to global capitalist society. He introduces a subsumptive hierarchy, or 'specification hierarchy,' in contrast to the more common compositional hierarchy in order to articulate a graduated series of integrative levels of reality in order to avoid the issue of reductionism and account for levels of increasing complexity. While he avoids the crudest forms of reductivist claims, the 'difference' between levels soon evaporates through the imposition of the categories of a single discourse, the categorial assemblage of thermodynamics. The specification hierarchy '{physical dynamics { material connectivity { biological form { social organization}}}}' masks difference in kind between levels by asserting the continuity of thermodynamic energy, where difference can only be interpreted against the background of a more fundamental identity.⁴⁹ The uniqueness of living forms is reduced by translating it into the language of thermodynamics: 'living systems seem to represent a fine-tuning of the entropy production process: they are pulled into existence, and then into diversity, in order to dissipate the varied smaller-grained local gradients that hide within the cracks, escaping destruction by coarser [abiotic] consumers. Therefore, the final cause of the origin of life will have been the pull of gradients to be demolished.'⁵⁰ The same holds for an explanation of the human mind:

47. Hartmann, *New Ways of Ontology*, p. 59.

48. Stanley Salthe and Gary Fuhrman, 'The Cosmic Bellows: The Big Bang and the Second Law', *Cosmos and History: The Journal of Natural and Social Philosophy*, vol. 1, no. 2, 2005, pp. 295-318, p. 296. To be fair, Salthe and Fuhrman do claim that interpreting the hierarchy of forms in terms of thermodynamics is just one perspective, 'we are consciously taking a very partial view, because the myth we are telling appears most clearly at the most general (physical) level.' Their rationale is that 'a more generally applicable explanation of a phenomenon is preferable to one that is less able to be generalized because such an explanation facilitates comparative studies in the interests of a unified view of nature,' p. 297. This devotion to unity already militates against any genuine appreciation of difference. Although he moderates this devotion in a recent essay (see following note), unity is still a primary value for Salthe. The adoption of a logical, set-theoretical model of subsumption among levels betrays an image of thought grounded in identity.

49. Salthe, 'A Hierarchical Framework for Levels of Reality: Understanding Through Representation', *Axiomathes*, vol. 19, 2009, pp. 87-99, p. 89. To see how 'difference' is almost everywhere subordinated to identity for the purposes of representational thought see Gilles Deleuze's *Difference and Repetition*, trans. Patton, London, The Athlone Press, 1994.

50. Salthe and Fuhrman, 'The Cosmic Bellows', p. 303.

‘Natural philosophy...puts the human mind in its place by modelling it as a recent specific development of tendencies which have been (and continue to be) vaguely and generally present in the universe.’⁵¹ These ‘tendencies’ are embodied in the second law of thermodynamics. This emergentism dissolves difference in the world by relying on one stratum of categories only. This type of genetic perspective is often obscuring as much as illuminating. Here it obscures genuine human scale ecological relations, our diffuse dependence on nature, as much as gene-centered explanations do. Hartmann frequently cautioned against this type of error: ‘The most important errors of metaphysics consist in overstepping the limits of the validity of individual categories, i.e., in their ‘application’ to objects for which they are not appropriate....every blunder which occurs here has immeasurable repercussions.’⁵²

In contrast to emergentist views, strata differences are ‘different not by mere gradation but in the sense of basic heterogeneity and incomparability.’⁵³ Thus real difference in kind can exist where at the same time there is some degree of categorial continuity (in terms of the recurrence of lower categories) and dependence, without subordinating difference to identity. Individual things are not to be seen primarily as units in a hierarchical, granulated series of forms, but as reticulate centers cross-cut by categorial strata. A single stratum of categories is a coherent assemblage of mutually implicating terms, and, at any level above the lowest, involves the appearance of a collective categorial novelty which defines the level. This does not entail that lower categories do not recur in higher strata, but such recurrences do entail significant modification of the recurrent. Individual things are stratified within themselves, suffering reticulation or entanglement of categories and principles, but the strata remain aloof and relative to an investigator’s perceptual conditions, interests, and values. All individuals, including the human investigator, are mixed, stratified, and each becomes comprehensible ‘only through the interrelatedness of the strata.’⁵⁴ Plants and humans are both physical as well as organic beings—hence their continuity—but at the same time humans implicate principles from psychic and spiritual strata not shared with plants, announcing their difference in kind.

Such a scheme allows us to bear witness to human continuity with the natural world without sacrificing our uniqueness, nor our irremediable, persistent, and diffuse dependence upon and continuity with nature. This is precisely what is needed in order to approach the problem of a sustainable human society.

8. CONCLUSION: A HUMAN ECOLOGY

One-sided philosophical anthropologies often make it difficult to grasp the complexity of the human ecological involvement and prevent even more damage to ourselves and the earth’s life support systems. If human beings *are* simply gene-machines in an ecosystem

51. *Ibid.*, p. 302.

52. Hartmann, ‘Ziele und Wege der Kategorialanalyse’, pp. 500-501, my translation.

53. Hartmann, *New Ways of Ontology*, p. 50.

54. *Ibid.*, p. 49.

or dissipative structures unconsciously burning and building, it is hard to imagine our purchase on a horizon of values to guide us out of the dilemma. If we are taken as ensouled responsible stewards of nature—or worse, postmodern loci of subjugation—then we may forget that we too are products of and embedded in the natural world, and not above it. Here these incomplete and incompatible positions dissolve into a stratified, pluralist realism which can account both for our need for criticism of the current order and our embeddedness in a natural one. It is a *human ecology* in the broadest meaning of the phrase.

I argued that it is important to distinguish between two forms of naturalism, conservative and emancipatory, but that this distinction relies upon a dualism which must be critically examined. The same dualisms recur in ecophilosophical interpretations of the place of the human in nature as well as in classical theories of human nature. I presented a resource in the tradition of philosophical anthropology which enables us to avoid dualistic thinking and espouse an emancipatory naturalism by resisting reductionism and acknowledging the diffuse dependence of human being on natural processes. In order to fully illuminate the biological prerequisites of the *existentialia* it became necessary to define an appropriate approach to ontology. This critical ontology facilitates a stratified understanding of the place of humans in nature without lapsing into reductivism or post-Kantian constructivism. It provides a sounder basis than either alternative for motivating an ecophilosophical perspective on human being.

It is not just that a nonreductive philosophical anthropology is more ‘empirically adequate’ than the reductive, but that it allows us a vision of human being as an ‘achievement,’ as a moral and political agent with personal value-commitments, as well as a living, physical and ecological being embodying natural, cultural, and personal histories. Our utopian ‘power of denying what is in favor of what we believe ought to be, of demanding what is not in defiance of what is’⁵⁵ bespeaks purchase on a realm of values orienting everyday practices, enabling the reflexive categorial commentary on the human place in nature, and on our ecological visions for the future of humanity. Human beings are embedded in natural and social environments; embodied in organismic forms; enthralled by meaningful signification, symbols, moral values and ideology; and enmeshed in economic, technological, and ecological networks of (re)production and consumption. Embedded, embodied, enthralled, enmeshed—these entanglements reveal irreducibly multiple material, practical, and symbolic interrelationships. Critical ontology enables a progressive naturalism which provides a framework for a naturalistic understanding of continuity and difference in human and nature.

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