Feeling Our Way

to an

Ecological Civilisation

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ABSTRACT

The problems that humanity faces with regard to our relationship with the rest of nature are due to the internal models that we use to shape our understanding of the world. As a result of the prominence of dualistic thinking, based on the ideas of Descartes and his successors, these models reflect a dualistic understanding of nature, and this dualism, and associated ideas, has led humans to feel separated from the rest of nature. In turn, this has resulted in an ethic of exploitation and domination, and this epistemological crisis — a crisis of knowledge and understanding — has crippled our ability to respond to the “wicked problems” that are seriously impacting the health of the global ecosystem, and threatening the future of humanity.

The metaphysics of Charles Sanders Peirce enables the development of a cohesive, comprehensive and well founded solution to this crisis by providing a radically anti-dualistic conception of the natural world. Informed by Schelling, the Romantic Movement in general, and earlier traditions of thought, Peirce articulates fundamental Categories of Being, a triadic Semiosis, and a universal Synechism that enables the discernment of continuity throughout nature. Through the application of Peirce’s framework, internal models of the world can be reformed by the value and strength of our feelings about the natural world, based on our aesthetic experience of wholeness in nature, and guiding what Peirce describes as the formation of habits. This process supports the development of a new ethical outlook, which forms the basis for the resolution of our epistemological crisis through a reconfiguration of the distorted and incomplete understanding of rationality that has been generally accepted since Descartes’ time.

Peirce’s triadic semiosis, cast as a common language of nature, supports the use of rhetoric, metaphors and the development of shared, polyphonic narratives that engage our emotions and imagination. These narratives support the translation of feelings into new
habits of action that reflect our reconnection with the rest of nature. Thus, an ecological civilisation is achieved by the cultivation of personal and societal qualities that lead to transformative actions, not by proscriptive means, imposed by a hierarchy of interests, but following naturally from our feelings of connection with the rest of nature.
ACKNOWLEDGEMENTS

I would like to thank my Principal Supervisor, Associate Professor Arran Gare, for his patient guidance and unwavering support, as well as for setting a bold and significant direction for my work. All members of the Philosophy Department at Swinburne University of Technology have provided encouragement by word and example, and in particular Dr Michael Dix, who has been educating me since my very first philosophy class, kindly gave me candid counsel on this project when it was needed. Dr Paul Healy, as Associate Supervisor, provided invaluable feedback which helped me to bring greater clarity to this complex exposition, and to strengthen and refine some of the central arguments of the thesis.

Fellow PhD candidates, in particular my dear friend Jeremy Hutton, provided a great deal of support, helped me to hold on to my remaining sanity, and always reminded me of the political context of my work. Attendees and presenters at meetings of the Joseph Needham Centre for Complex Processes Research also provided a sense of solidarity, shared valuable ideas, and acted as a sounding board for presentations based on early drafts of this thesis. Outside of Swinburne, Christos Iliopoulos pointed me to a particular ethical perspective that now forms an important part of the work.

My children at home have felt my absence over many weekends, public holidays and evenings for the last four years, but to be always welcomed home with open arms — at least when my return was not, as it so often was, past their bedtime — is a joy that I will always treasure. And if this work makes any contribution at all to solving the “wicked problems” that beset the world in which they are growing up, then the effort will have been truly worthwhile. My wife has been unwavering in her love and support, and without her this endeavour would never have come to completion. And she has at least promised to read my thesis “if it is the last book on earth.” I love you for all that you are, Gina.
Finally, I must acknowledge, as I do throughout this dissertation, Charles Sanders Peirce. Like my philosophical mentor, Arran Gare, his work shows that he continually refined and expanded his ideas and insights, and never gave up searching for the knowledge that would not only enable us to understand our world and ourselves, but also would provide a way to bring harmony, justice, respect and love to humanity’s coexistence with the rest of nature.

DEDICATION

This work is dedicated to my children and grandchildren.
DECLARATION

This document

1. Contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text.

2. To the best of my knowledge contains no material previously published or written by another person except where due reference is made in the text.

3. Contains no work based on joint research or publications.

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REFERENCING PEIRCE AND SCHELLING

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Introduction

“We stand at a crossroads in the evolution of Western consciousness. One fork would lead to salvation through science and technology — a Brave New World. The other fork leads to a reality that allows us to live in harmony with the environment, and have a sense of intimacy and community.” — Morris Berman¹

¹ Morris Berman, The Reenchantment of the World (New York, NY: Bantam, 1984), p.113
Our Current Civilisation

OUR CURRENT CIVILISATION IS in a state of what James Coffman and Donald Mikulecky call “global insanity,”² where the very precepts on which our civilisation is based are shattering the ecological conditions for humanity’s existence. The situation is dire and requires urgent and widespread action. We can attempt to resolve climate destabilisation as the most immediately obvious problem, but even this may be characterised as a “wicked problem.” This concept, introduced by Horst Rittel and Melvin Webber, refers to a problem that is not morally wicked but diabolical, in that it strongly resists all attempts at solution. Wicked problems incorporate complex issues that defy complete definition, and where partial solutions are the best that can be achieved at the time, but are usually far from complete resolutions, since any resolution generates further issues, themselves also complex, intertwined.³

However, I argue in this dissertation that this is merely a symptom of an underlying sickness: Humanity’s dysfunctional relationship with the rest of nature. Other symptoms of this sickness include widespread and growing economic inequality, political apathy, social disconnection, corruption of democracy, and continuous and growing armed conflicts. We see signs of ecological collapse, social breakdown, increasing religious fundamentalism, and a rise in authoritarianism.⁴ It seems that just as solidarity is needed, a focus on gaining material possessions is driving us apart and leading to widespread loneliness.

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and disempowerment;\(^5\) apathy is rising instead of empathy; and a disoriented, dispassionate, self-centred populace is unlikely to work together to solve this problem.\(^6\)

The goal of this project, though, is to present a vision of an ecological civilisation and to show the path to initiate its formation. This dissertation will argue that the roots of our current dysfunctional civilisation lie with dualistic conceptions of the natural world\(^7\) which form the foundation of the prevailing reductionist perception of life as mechanistic and deterministic. These conceptions have laid the groundwork for Darwinism and Social Darwinism, which have enabled the resultant rise of neoliberalism as the dominant political and economic ideology of our times. The deep assumptions of this understanding of nature and its application to social structures and institutions has led to a disconnection from the rest of the natural world, and this has deeply affected humanity on individual and social levels. Rittel and Webber note that, “understanding a wicked problem requires understanding its context,” and they warn that “one cannot meaningfully search for information without the orientation of a solution concept.”\(^8\) A “solution concept,” based on a comprehensive, cohesive and pragmatic metaphysical system, is what this project attempts to provide, in order to provide a firm theoretical foundation that can support and orient efforts to implement a solution.

In order to develop a solution concept I will draw on the metaphysical framework of American philosopher Charles Sanders Peirce (1839-1914), and from this standpoint I

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\(^7\) Arran Gare, "Overcoming the Newtonian Paradigm: The Unfinished Project of Theoretical Biology From a Schellingian Perspective", *Progress in biophysics and molecular biology*, 113, no. 1 (2013): 5-24

\(^8\) Rittel and Webber, "Dilemmas in a General Theory of Planning", p.162
will examine the flaws in the current dualistic view of nature and reconsider our place within it. I will argue that Peirce built on the ideas of earlier thinkers, and enhanced a framework of understanding developed by Friedrich Wilhelm Joseph Schelling (later von Schelling) and others in the Romantic movement. Based on this foundation, Peirce conceived fundamental Categories of Being, and his evaluation of the findings of phenomenology through these Categories enables us to see the flaws in the current view of rationality, particularly as expressed in scientific and political fields. His overarching metaphysical position supports a view of rationality that is truly holistic, recognising the primary place of aesthetics and ethics in human experience and behaviour, just as it takes a vital place— I shall argue—in the rest of the natural world.

In addition, Peirce’s development of his Semiotic enables us to see ourselves as part of a purposeful natural world, as its application stretches far beyond the human world to enable a shared understanding of all of nature, and that it supports his claim that “all this universe is perfused with signs, if it is not composed exclusively of signs” (EP II: 394). As Arran Gare suggests: “Peirce’s efforts to characterize semiosis in this way [were] the basis for his solution to how to conceive ourselves as being part of and having evolved within nature.” Peirce also presented a view of nature as “synchistic,” that is, continuous, undivided, and he argued that mind and matter, agency and activity, subject and object are not bifurcated, as in the dualistic conceptions of the natural world— often unstated and unnoticed— that pervade our approach to the study of nature.

Therefore, I also propose, based on Peirce’s thought, some enhancements to the practice of acquiring knowledge of the natural world that will help to free us from the

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9 This is variously spelled by Peirce and others as ‘semiotic,’ ‘semiotic,’ ‘semeiotics,’ or ‘semeiotic’.
fundamental errors that originate in dualistic views of mind and matter, such as the removal of the attribution of subjectivity and creativity to nature, and the division of humanity from the rest of the natural world which occurs as a result of the pervasiveness of these ideas. As Gare argues about many forms of scientific enquiry, they are

…dominated by the unimaginative tried and true methods and mathematics of reductionism, [and have] largely abandoned the quest to make life itself intelligible. The consequent drying up of new insights into physical reality has crippled science as a whole."11

I also argue that these ideas, methods and assumptions are based on the models that we internalise, and are are sustained by ideologies that also powerfully shape our understanding of the world. As Gare continues:

[S]ince it is through what is understood of the world through science that societies model themselves and their relation to their environments and anticipate their future, this failure of science, foisting defective models of reality on whole societies, now threatens their very existence.12

Echoing my assertion that this not only impacts our health and well-being, but also threatens our existence as humans, Wendy Wheeler observes, that

…people generally have no problem with the idea that an overly perturbed, i.e. hostile, natural environment can damage or kill; but the idea that a social environment can really make you sick, or even prematurely kill you, is something that, in the residues of a culture of mechanism and individualism, we still find much harder to believe.13

To enable an ecological civilisation to arise, new individual and societal models will be required to replace the current ones. By incorporating the semiotic metaphysics of Peirce, along with ideas from human ecology, we are able to describe the models that are needed

11 Gare, "Overcoming the Newtonian Paradigm: The Unfinished Project of Theoretical Biology From a Schellingian Perspective", p.20
12 Ibid., p.20
to produce a movement towards an ecological civilisation, including the articulation of a narrative, as a form of model, that can communicate the character and benefits of an ecological civilisation, and move us to take action that will enable its establishment. But we seem so far removed from the conception of an ecological civilisation, we can ask if it is possible to even imagine what it would be like. So let us first consider what it means to be civilised and thus to be part of a civilisation.

Civilisation as Cultivation

As noted by Gare, civilisation has been defined “as both a process and a…condition of social order,”14 and therefore civilisation implies the participation of individuals in the social structures of the community and of the state. Raymond Williams concurs, noting that although the word now refers to a state or condition, it was originally used to refer to a process, as in the production, maintenance or even the imposition of a social order onto a brutish, unorganised or “barbaric” group of individuals. The basis of a civilisation is complex, powerful and resistant to change. A civilisation’s influence on its members is pervasive and profound. But because civilisation is based on cultivation, civilisation is not immune to transformation. By definition, therefore, it is also subject to change. And enhancing or even maintaining civilisation requires ongoing activity that is oriented to that end. Samuel Taylor Coleridge, one of the founders of the British Romantic Movement notes that:

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14 Gare, “Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis”, p.4
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The permanent distinction and the occasional contrast between cultivation and civilisation... [t]he permanency of the nation...and its progressiveness and personal freedom...depend on a continuing and progressive civilisation.\textsuperscript{15}

And if this cultivation does not take place? Coleridge describes the characteristics of a civilisation that does not practice the cultivation of qualities that support its development, in which case civilisation forms a surface coating, a “varnish,” rather than the more deeply embedded “polish” (likely an allusion to the time-consuming process of “French polishing” that was used in Coleridge’s day). As Collingwood explains:

But civilisation is itself but a mixed good, if not far more a corrupting influence, the hectic of disease, not the bloom of health, and a nation so distinguished more fitly to be called a varnished than a polished people, where this civilisation is not grounded in cultivation, in the harmonious development of those qualities and faculties that characterise our humanity.\textsuperscript{16}

Thus, from the 18\textsuperscript{th} Century, civilisation has come to stand for a complete social process. And, as Gare notes,

Civilised societies differ from uncivilised societies in the complexity and coherence of their cultures and ideals and thereby in the degree of complexity of their organisation, and, most importantly, the degree of cultivation of its members required to uphold these ideals and to participate in these complex societies.\textsuperscript{17}

Terms such as “agricultural civilisation” and “industrial civilisation” provide evidence that transformation has occurred previously — and multiple times — and the fact that we can codify an entire geographical and temporal complex as “Greek civilisation” or “Roman civilisation” gives some indication of our ability to conceive of various embodiments of the concept. As we observe the complexity of the globalised society in which we live, and the resistance that it seems to present to any kind of fundamental change that

\textsuperscript{16} Ibid., p.46
\textsuperscript{17} Gare, “Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis”, p.5
would lead us to a more ecological civilisation, this reinforces the understanding that, first of all, civilisation does not “just happen” and second, that it cannot be imposed on people from outside, by rules and regulations, but that it needs to be cultivated by individual awareness and education. Certainly, in order to become “ecological,” our current civilisation requires a different kind of cultivation, one that is based on values that support a different kind of civilisation, as it now seems to be focussed on cultivation founded on values that oppose the health of the ecosystem. Part of the problem is that the assumptions on which a civilisation is built are often either invisible or deliberately concealed, and therefore difficult to discern and even harder to change, therefore identifying, understanding and exposing these foundational ideas is a key to transformative change.

I will argue that, although this transformation is truly civilisation-changing, it begins with the attitudes and feelings of the individual, which change leads to a form of rationality that supports an ecological civilization. Gare suggests the scope of the transformation that is needed, when he notes that it is required to develop forms of thinking that will enable us to reconsider

…the relationship between humanity and nature and between individuals and their communities, the nature of culture and civilisation, and thereby to transform the way people live and organise themselves. [This] requires a different kind of ethics and political philosophy than those which have dominated modernity.¹⁸

And what is this “kind of ethics and political philosophy”?

Fernand Braudel speaks to the complexity, the unspoken assumptions, and the cultural knowledge and practices behind a particular civilisation, in this case, one characterised by a “market economy,” when he suggests that

¹⁸ Ibid., p.6
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…there is another, shadowy zone, often hard to see for lack of adequate historical documents, lying underneath the market economy: this is that elementary basic activity which went on everywhere and the volume of which is truly fantastic.19

In this dissertation, I will work to expose this “shadowy zone” and its “elementary basic activity” and bring them into the light. But let us now examine the “ecological” aspect of an ecological civilisation.

Recognition and Relationships in an Ecological Civilisation

It is interesting to consider the example of a nation that has set an ecological civilisation as its goal, the most populous country on earth, and the one which is also the greatest source of climate destabilising greenhouse gases. The example is that of China which in 2012 embraced the concept of an ecological civilisation at the level of its constitution.20 Despite the magnitude of this change, the organisation China Water Risk notes the high level of support for this transformation and in November 2013, reporting on the annual meeting of the China Council for International Co-operation on Environment and Development, explained that the

…call for an ecological civilisation was repeated by Zhou Shengxian Minister of the Environment, in the annual meeting of the China Council for International Co-operation on Environment and Development [and this has] reasserted the government’s commitment to build an “ecological civilisation.”21

Let us examine this notion as described by the Chinese government, as it suggests how an ecological civilisation could be defined and some of the characteristics it would display.

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In 2012, a report to the Eighteenth National Congress of the Communist Party of China (CPC) defined ecological civilisation as follows:

The term ecological pertains to the state in which nature exists, whereas the term civilization refers to a state of human progress. Thus, ecological civilization describes the level of harmony that exists between human progress and natural existence in human civilization.²²

In addition, Ke Jinhua, Senior Editor of the Social Sciences in China Press, has outlined the scope of a change to an ecological civilisation, when she explains:

Ecological civilization represents a new tendency in the development of human civilization and a great transformation... Historically, human society has gone through a number of forms of civilization: the primitive, the agricultural and industrial. It has now come to a crossroads: although industrial civilization has created unprecedented material prosperity, its excessive exploitation of nature has destroyed the equilibrium between man and nature.²³

But what is needed is not just the transformation of one nation — even if this does prove to be possible — but the transformation of civilisation on a global scale, and the radical reconfiguration of humanity’s relationship with the rest of nature. How is such a reconfiguration possible?

If ecology is the study of homes (Greek: eco), then an ecological civilisation needs to consider all the communities — human and non-human, living and (perhaps) non-living — that make up our earthly “home.” I will later discuss human ecology, which incorporates humans as an explicitly recognised component of the ecosystem, and as cultural beings who are able to generate, sustain and modify community structures in a way that non-

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human animals are not. I also argue that it is impossible to consider issues of ecology by only focussing on individuals — be they individuals that are human or non-human. As Amos Hawley reflects as he discusses the relationship between humans and the ecosystem:

[A] workable relationship with the environment is achieved not by individuals or even species acting independently, but by their acting in concert through an organization of their diverse capabilities, thereby constituting a communal system. What is necessary for lower forms of life is even more compelling for human beings.24

Hawley seems to be suggesting that we need a community that includes what he terms “lower forms of life” along us as with human beings. I also argue that recognition of all inhabitants of the biosphere as agentic, free and creative beings is a prerequisite for an ecological civilisation.

Later I will examine how Gare, following Hegel, discusses a dialectic of recognition which, along with the dialectic of labour and the dialectic of representation, drives the human compulsion to correctly represent the world. Gare notes that the dialectic of labour, which he argues is a semiotic process, enables humans to contribute drastically to the morphogenesis of nature. But it is the dialectic of recognition, a key contributor to the human ability to form civilisation, which is so important in its remapping to an ecological civilisation. The “recognition” refers to the ability of humans to acknowledge others as subjects and therefore to appreciate that we are all free social agents inhabiting the same world, sharing this home as citizens of the same ecosystem. This recognition also enables humans to “form identities, develop a sense of justice and a sense of themselves as individuals with potential to be realised.”25 Thus, the recognition of all of these fellow “citizens” necessarily means a modification of our own behaviour by means of constraints.

25 Gare, "Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis", p.14
Constraining thought and action due to the acknowledgement of the freedom and significance of others indicates that we are recognising them as free agents and subjects in their own right, and it is this recognition that enables complex, stable cultural structures to emerge, cohere into a civilisation, and be sustained over multiple generations. The exercising of constraints can be seen as evidence of what Peirce refers to as “habit taking.” And, as I shall discuss in more detail later, Peirce refers to the formation of habits in nature as supporting the development of “reasonableness,” and explains its power as follows: “For it is governed by law: and to him who has bent his ear to that law it articulately testifies, though in a whisper, to the existential might of reasonableness” (CP 6.329).

It would seem obvious that it is “unreasonable” to continue to destroy the home where we live and on whose existence we depend, and this is another endorsement of the importance of Peirce’s ideas in this argument. Peirce defines habit change as “a modification of a person’s tendencies toward action, resulting from previous exertions of his will or acts, or from a complexus of both kinds of cause” (CP 5.477). And with respect to community, he also strongly supports the notion of community rather than individuality in the strongest terms, when he states: “When we come to study the great principle of continuity…it will appear that individualism and falsity are one and the same” (CP 5.402 n.2). And as Jesper Hoffmeyer notes, habit taking by living cells and their participation in organisms or collections of organisms — as, for example, humans in a civilisation — can be studied through biosemiotics, the semiosis of life, as I shall also discuss.26

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Crucially, this habit forming also produces resistance to change and finding ways to overcome or dissipate this resistance is an important consideration in moving towards an ecological civilisation, as well as considering its role in maintaining the stability of a new model of civilisation. I argue that a focus on individualism without also considering the communities that make up the ecosystem in which we reside is one of the factors that is leading to global ruination. Peirce said with great conviction that

…you must abjure this metaphysics of wickedness. In the first place, your neighbors are, in a measure, yourself, and in far greater measure than, without deep studies in psychology, you would believe. (CP 7.571)

In line with my assertion that Peirce is radically anti-dualistic, Robert Lane notes that, “This is one of Peirce's most radical claims about personhood, a claim that distances him from Descartes' [dualistic] picture of persons as isolated and discrete minds." In Peirce’s words: “Thus, the very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits (emphasis in original)” (CP 5.311).

This viewpoint also has a fundamental ethical basis which I will consider later, as Stanley Harrison observes that “Peirce's theory that a person is a sign…puts in place the foundation for a view of man as a being involved in the creation of a community with a specific moral character” and that Peirce’s claim, as articulated by Elvira Tarr, that

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...”growth comes only from love... from the ardent desire to fulfill another's highest impulse” (CP 6.289), if fully applied, would be a picture which gives the man/sign a central and irreplaceable task in “the development of concrete reasonableness” (CP 5.3), the greatest manifestation of which is the work of creating a community that seeks to realize and thereby exemplify those ends or purposes that are intrinsically worthwhile. 

Peirce’s work supports the argument that we, as individuals, gain a large measure of our cognitive, aesthetic and moral abilities from our relationships with others, in what Tarr describes as “a social web stretching continuously from the past and connecting with individuals in the present.” And I argue that this “social web” could also include all other members of the biosphere with whom we share commonality as semiotic beings. There is broader support for this view than we might expect.

As Gare notes, if recent developments in theoretical ecology which incorporate not only hierarchy theory but also non-linear thermodynamics, parts of complexity theory and — particularly relevant for this project — biosemiotics, including eco-semiotics, situate humanity “as a complex of processes and structures within the global ecosystem,” this enables us to see that we humans are, as Aldo Leopold puts it, “only a member of a biotic team.” However, this is not a trivial task, as the institutional structures of scientific enquiry and all levels of education inculcate and sustain the opposite view to this. The very structure of our educational systems and institutions reflects the dualistic concepts of the world. Alf Hornborg notes that the conceptual split between a “natural” and a “societal” domain “is at the foundation of the division of social and natural sciences, and it continues to make communication between researchers in these two categories difficult and often

30 Ibid., p.221
32 Gare, "Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis", p.7
antagonistic.” This project will also suggest ways to bridge this gap through individual and societal change.

A Community of Ecological Selves

As I argue, the individual, the community, and the relations between them all need to be considered in the context of an ecological civilisation. Herman Daly and Clifford Cobb agree that the notion of community must be considered as central to the notion of societal change. In the context of a political perspective they acknowledge the importance of power relations in “deeply affect[ing] all political and economic activity,” and note that,

If there are features of human behavior that are not inherent in human nature as such but are sufficiently widespread to cause major problems for community, then it is natural to ask how the community functions to elicit those patterns.  

However, as Daly and Cobb recognise, it is difficult to incorporate the needs and desires of communities into that collection of communities that forms society. Decentralisation can lead to fragmentation, with communities each looking only to their own interests and unaware or unwilling to consider the needs of the broader society; whereas centralisation tends to reduce the participation and muffle the voice of the individual communities. They therefore expand the idea of community in societal change by introducing the idea of “communities of communities,” as a hierarchy of interests and relationships, and although they speak of it from a political perspective, it is possible to see how

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35 Herman E Daly and Clifford W Cobb, *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future* (Boston, MA: Beacon Press, 1994), p.181
36 Ibid., p.176
this could be applied to include other, if not all, inhabitants of the biosphere in this taxonomy. The local community provides a basis for self-identification, and the community is also able to provide a greater level of influence within higher levels of community groups. But can this really be applied to non-human communities in the biosphere?

Gare notes that Eugenius Warming, one of the originators of the term “Human Ecology,” “characterised ecology’s object of study as ‘the manifold and complex relations existing between the plants and animals that form one community’” and also that “Clements characterised ecology as ‘the science of the community.’” As Daly and Cobb suggest,

…[t]he alternative is to think of the larger community normatively as a community of communities. One's local community[, the community of humans,,] would then become a primary basis for self-identification. This carries the implication that the other “communities” also then loom larger in our awareness as participants in the biosphere and therefore can be seen as contributing to our own identities.

I will, therefore, argue for the importance of recognising the paramount role of relationships, instead of taking a reductive, mechanistic perspective which tends to focus on individuals merely as components. This is vital if we are seeking to understand ecosystems and how our place in them can support their flourishing. As Fritjof Capra suggests:

All members of an ecological community are interconnected in a vast and intricate network of relationships, the web of life. They derive their essential properties and, in fact,
their very existence from their relationships to other things. Interdependence — the mutual dependence of all life processes on one another — is the nature of all ecological relationships.

The behavior of every living member of the ecosystem depends on the behavior of many others. The success of the whole community depends on the success of its individual members, while the success of each member depends on the success of the community as a whole.\(^{40}\)

But what of the individual — do we become lost in the community? I argue that the self, and the sense of self that we carry, is an important aspect of this transformation.

In line with the assertion that our selfhood, or as we might describe it in subjective terms, our “sense of self,” needs to be recognised as founded on our relationships with others, I argue that this recognition comes not only from our intellect, our rationality, but also from our feelings, our “sense.” Freya Mathews has introduced the idea of the “ecological self,” as a form of “relational self” founded in an ecological community, strongly reflecting the concept of an “ecology of selves,” which I will discuss in more detail later. As I argue that the community and individual are vital to consider together in a transformation to an ecological civilisation, she also suggests that this

\[\text{…form of human identity [is] defined not in terms of its independence from others but rather in terms of its relationships with them [and that this] would provide a more appropriate ontological foundation for an ecocentric polity…. It is the ‘relational self’…that regards the interests of others as inextricable from its own, and is accordingly imbued with fellow-feeling.}^{41}\]

“Fellow-feeling” can otherwise be known as empathy and Mathews argues that cultivation of the ability to understand and share the feelings of another will


...produce the kind of selves capable of experiencing themselves and their relation to nature in a way that is likely to induce in them an attitude of sympathetic concern for the natural world, and hence an ecocentric [rather than an “egocentric”] outlook.

And Daly and Cobb also point to the the vital role of understanding in producing change, suggesting that: “To whatever extent they can be understood, changes can be proposed.”

I argue later that key to this is the felt understanding of our relationships with the rest of the natural world, enabled by our recognising a common means of communication with nature. As Mathews explains, this can change our behaviour toward the other inhabitants of the biosphere, as our actions will then be “a matter of responding appropriately to those we do know — those with whom we are in communication, in relationship.”

In line with what I argue concerning the dialectic of recognition, the way that we see ourselves is inextricably bound up with the way that we see others. As Mathews explains it, this means that our

...subjectivity — the essence of [our] selfhood — is constituted intersubjectively: the self becomes aware of herself as subject by recognising the subjectivity of others and by having her own subjectivity simultaneously recognised and affirmed by them.

Thus, I argue, the mutual recognition of subjectivity, including agency and creativity, is necessary for the existence of community. And this is not just applicable to a human community. Returning to this theme, Mathews continues by suggesting that

...community needs to be understood here not merely in human terms, but also as community with nature. That is to say, the eco-community will be such as to facilitate relationships not only amongst its human members, but also between its human members and their biotic neighbourhood.

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42 Daly and Cobb, For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future, p.181
43 Mathews, “Community and the Ecological Self”, p.76
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Human individuals will in this way come to experience themselves as constituted through their relationships with the natural world as well as with the human world.\(^{44}\)

And in a very moving narrative, which places humans as just one “nation” in a global community, Henry Beston suggests a new way of seeing the world:

We need another and a wiser and perhaps a more mystical concept of animals. In a world older and more complete than ours they move finished and complete, gifted with extensions of the senses we have lost or never attained, living by voices we shall never hear. They are not brethren, they are not underlings; they are other nations, caught with ourselves in the net of life and time, fellow prisoners of the splendour and travail of the earth.\(^{45}\)

As part of our search for understanding how such a transformation could take place, I will also later consider the relationship with nature that occurs in a society that we may consider as still “pre-modern,” and which provides an example of the recognition of the importance of the individual and their role in the community with respect to all inhabitants of the biosphere. In a similar vein, architect Christopher Alexander speaks of the attitude towards the world that was expressed in pre-modern times, and is still understood, appreciated and practiced in some societies:

The relation between a person, and the living structure in the world, is an actual and tangible relationship of the kind that we have not yet grasped. The essence common in all these cases, is that people really saw all of nature as a single embracing whole, of which they were a part. Their sacred relationship to this whole was the foundation of their lives.

It hinged on the awareness that they and it are not separate, cannot be separate, are two halves of a single whole….The existence of this relatedness, our right to exist, our love for the world, acknowledged as the real thing, and their relationship to all of it as something permitted, endorsed, supported: they can hardly be anything greater than that. Our

\(^{44}\) Ibid., p.80
lives will be changed, utterly, if we can establish as factual this personal relatedness be-
tween each person and the living world.\textsuperscript{46}

Here Alexander is stressing the importance of the relationships of individuals to the
“wholeness” of the natural word — which wholeness includes they themselves. He also
speaks of the vital consequences of “establish[ing this] as factual,” and this is an area I will
examine as I discuss changes to our view of knowledge and its acquisition.

This is not an easy change, though, as — particularly in a society that prizes indi-
viduality — a feel for community, and especially for communities of communities, raises
many challenges. Gilles Deleuze points to the issues in achieving this, as once we
acknowledge a relationship with others in this biotic community we are confronted with
the need to show respect and honour the relationships that the other members participate
in. This arises particularly when we consider them as “rational beings,” in some way like
ourselves. Deleuze asks,

How can a being take another being into its world, but while preserving or respecting the
other’s own relations and world? And in this regard, what are the different types of socia-
ilities, for example? What is the difference between the society of human beings and the
community of rational beings?

I will consider “rationality” in light of Peirce’s thought later in this dissertation, but I will
now outline the overall structure of our argument in this document.

Outline of Thesis

Part 1: A Metaphysical Solution for Problems of Ideology

This Section points to the pervasiveness of dualistic thinking, combined with a mechanistic, reductionist approach to the study and understanding of the world, as a fundamental reason for our dysfunctional relationship with the rest of the natural world and as the major obstacle to the establishment of an ecological civilisation. I also argue that only a radically anti-dualistic metaphysical system is able to make clear the path towards this goal, as this is the only way to counteract the deeply embedded dualistic thinking that pervades our present society and prevents the establishment of a civilisation that sees humanity as part of nature rather than separate from it. I therefore present the metaphysical system of Peirce, including his Categories of Being, Semiotic and Synechism and argue for its applicability to this project, looking also at its heritage, particularly in the work of the Romantic movement in general and von Schelling in particular, and I demonstrate how Peirce’s thought can form a firm foundation for this project.

Chapter 1: Dualism’s Raw Wound

This chapter introduces the major assertion of this project: Dualism and its associated propositions are the source of humanity’s disconnection from the rest of nature. Dualism is recounted as arising from Descartes’ work, based on some earlier thinkers and, along with the ideas of Newton and his contemporaries and heirs, forms the foundation of the dominant understanding of nature. The impact of dualism’s separation of sentience and agency from the physical world is described, and I argue that this has led to the dominant worldview as being distorted, nihilistic and detached from the experience of nature,
and this has produced a “wicked problem” that is destroying the conditions for life on earth. This disconnection, or as I shall describe it, “the disenchantment of nature,” has contributed to the rise of nihilism in society, and has helped to form the dominant ideology of neoliberalism and without regard to the consequences of this view, this ideology sustains and strengthens it. I also examine the utility and limitations of our current dualistically based methods of acquiring and applying knowledge of nature.

Chapter 2: Opposition to Dualism

The Romantic movement strongly opposed this dualistic understanding of nature that I have discussed, and members of this movement presented a coherent vision of a non-dualistic world, with Schelling as a bold proponent of this understanding of nature. In this chapter, Peirce is introduced as building on Schelling’s work and providing a comprehensive metaphysical system that can be used not only to expose the distortions in the current, dominant view of the natural world and our relationship with it, but also to provide the basis for a new relationship between humans and the rest of nature. I examine Peirce’s Categories of Being, his Semiotic and his Synechism, and also consider the social conscience that pervades his work.

Chapter 3: Introduction to Peirce’s View of Nature

Peirce’s thought is outlined, showing how his phenomenology (or “phaneroscopy”) leads to the articulation of his Categories of Being, with his normative sciences evaluating the findings of phenomenology through these Categories. Synechism, or continuity, is presented as “the keystone of the arch”, as Peirce termed it, is the unifying principle that completes our metaphysical understanding. The Categories of Being are discussed in overview form as providing a triadic understanding that supports a holistic view of nature,
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demonstrating the inadequacy of any dualistically-based understanding as a foundation for an ecological civilisation. Peirce’s semiotic, which concerns the development and communication of meaning and understanding, is argued as encompassing all communicative activity in nature.

Part 2. Reason Renewed by Aesthetics and Ethics

In this section I describe the potential of Peircian Categories of Being to provide a greater understanding of rationality. As it is currently conceived and practiced, “rationality” is fundamentally flawed, as it continually upholds and reinforces a dualistic understanding of the world, leading to an overwhelmingly instrumental orientation that supports the exploitation of the rest of nature, including fellow humans. It is shown that by reconsidering rationality in Peircian terms, as founded in aesthetics and as an integral part of ethics, we arrive at a broader understanding of rationality and establish it as a key constituent of a new understanding of the natural world.

Chapter 4: Aesthetics as a Foundation for Ethics

Aesthetics is an aspect of the Peircian Category of Firstness; it encompasses undifferentiated feeling and is manifested as a response to the aesthetic. In this chapter I argue that Firstness as undifferentiated feeling can be understood in relation to what I will describe as wholeness, a quality that I will argue is experienced throughout the natural world, including in human endeavours. And I assert that this forms a common foundation for aesthetics that exists throughout nature. I also point to the importance of Firstness as forming a foundation for an Ethic that can support the establishment of a new approach to reason and rationality.
Chapter 5: The Beauty of Ethics

Here I explore Peirce’s Secondness, in its manifestation as ethics, to show how ethics can be based on Firstness as aesthetics. In this chapter I argue that, as this is based on feeling as understood through Peircian metaphysics, it allows for an ethical appreciation that is based on empathy with the rest of the natural world. I further consider the concept of wholeness and include the idea of responsive cohesion as a way of understanding a connection between aesthetics and ethics. I also begin to examine an inclusive view of ethics as incorporating all of nature, rather than the currently exclusive view that grants ethical status only to humans.

Chapter 6: Rationality: The Beautiful and the Good

I outline in this chapter the meaning of Peircian Thirdness in the context of rationality, and argue that the current view of rationality is distorted through the dominant ideology and has become an incomplete and exploitative form. By considering rationality in the context of both beauty (Firstness, aesthetics) and goodness (Secondness, ethics) I discuss how we can recover rationality from its modern, degenerate form. In doing this we are recognising its inherent creativity as an aspect of the natural world and emphasising how it can support a holistic understanding of nature.

Part 3. Knowing the Citizens of the Semiosphere

Scientific enquiry is our current method of understanding nature and our place in it. I argue in this section that this is part of the reason for an “epistemological crisis” which underlies our ecological crises, and that we need to make some changes to our way of
understanding and acquiring knowledge. I suggest that for a civilisation to be truly ecological, we need to “know” our fellow citizens through recognising the pervasiveness of sentience and agency outside of the human realm, and by understanding semiosis as a common language that we share will all inhabitants of the biosphere. The Umwelt theory of Jacob von Uexküll provides us with a way to develop a semiotic understanding of experience that we can share with all living beings, and I argue that this view of experience will help to reconnect us with the rest of the natural world.

Chapter 7: Humanising Nature, Naturalising Society

After considering our epistemological crisis as a crisis of relationship, I here introduce the field of Human Ecology as a way to unite the study of human culture and the natural world. I argue for the value of Peircian semiosis and human ecology in providing a way to understand how human culture can coexist harmoniously with the rest of nature, and I discuss how human ecology examined semiotically enables us to see the importance of recognising and understanding the complex and manifold relationships between humans and the rest of the natural world. This focus on relationships in nature helps to improve our approach to epistemological enquiry.

Chapter 8: Natural Significance

In this chapter I discuss Peircian semiosis in more detail, and demonstrate its applicability to understanding all of the natural world, not just human culture, and not only living organisms. I argue that semiosis is a characteristic that we share with all of the rest of nature, and that understanding this helps us to recognise sentience and agency — and also value — as a fundamental quality of all life. To this end, I discuss biosemiosis, as well
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as semiosis on the level of ecosystems: ecosemiosis. I also consider how cybersemiosis can become an integral part of a transdisciplinary approach to scientific enquiry, an approach which is vital in order to address the multiple “wicked problems” faced by humanity and the rest of nature today.

Chapter 9: Semiosis in the Umwelt

Jacob von Uexküll’s work on the phenomenal worlds that exist throughout nature is discussed as demonstrating that an approach to the study of nature that is semiotically-based, and does not separate agency and sentience from the physical world, can be scientifically rigorous and at the same time of great value in enabling us to see ourselves as part of nature rather than apart from it. I argue that this also helps us to reconfigure the internal models that we use to help us to understand the world, and remove the distortions of dualism. I assert the importance of metaphor in the work of Uexküll and others in situating ourselves within the natural world, and enabling a complete rationality that does not devalue the experience of nature.
Chapter 10: Semiosis as Shared Language

Here I consider the value of semiosis when understood as a language shared with the rest of the natural community. In this chapter I argue that this concept helps to build empathy with all the inhabitants of the semiosphere, as I argue that an appreciation of semiosis as a shared language helps us to live a shared experience of the natural world with all of its inhabitants.

Chapter 11: Reconnection Through Experience

Our alienation from the rest of nature as the result of the institutionalisation of dualism is not only the cause of an epistemological crisis, but also leads to a felt disconnection from the rest of the world, and often from other humans. I argue in this chapter that the felt experience of being a part of nature is just as important in solving these problems as a purely “rational” approach, and provide an example of a culture that seems to experience this connectedness. I also suggest that an appreciation of the vital role of semiosis in nature enables us to empathetically experience the significance of other semiotic beings, and to see ourselves in social relations with them as members of communities. Failure to do so will continue the disconnection we feel from the natural world, which I here liken to a form of autism.

Chapter 12: Persuasive Epistemology

Rhetoric tends to be seen in the position of a servant, creating compliance to the dominant ideology, and this is often how it operates today. However, in this chapter, I argue that rhetoric plays an important role throughout the natural world, and an appreciation of this enables us to see how it can assist in the formation of an ecological civilisation. I also articulate the integral place of rhetoric in Peirce’s metaphysics, and how it
provides additional evidence for Peirce’s synechism and adds to our understanding and feeling of connection with the rest of the natural world which, I argue, can enable the transformation of our society and civilisation.

**Part 4. Transformation** The changes that are necessary to cultivate an ecological civilisation include the recognition of subjectivity throughout the natural world, the understanding of semiosis as forming a common language that enables us to listen to and communicate with nature, and the acceptance of experience and the feelings that it brings to the development of ethics and rationality. In this Section I look at how this transformation could take place, through understanding the internal models of the world that we use to make sense of our place in nature, and how they can be changed through the use of rhetoric and the development and articulation of new narratives.

**Chapter 14: Exposing Ideology to Change**

In this chapter I examine the semiotic aspects of ideology and its basis in the concepts of schema based on sign displacement, and also the functions of ideology in legitimating power structures and relationships — including those of humanity with the rest of nature — and in integrating a society so that it presents a generally cohesive structure and resists change. discuss how our world view is formed and how it can change and how this relates to the influence of ideology, also show how societal fields are maintained and how it is possible that they can be reconfigured.
Chapter 15: The Relationships of a Social Society

In this chapter I explain how the ethics that underlie the dominant neoliberal ideology have produced a “system society,” whereas what is needed to support the transformation of this project is a “social society.” A system society is one that is based on a distorted and constricted understanding of rationality, which gives primarily place to instrumental reason in defining the relationships that we have with each other and with the rest of nature. The social society recognises the importance of relationships in themselves, rather than as a means to an end, and this type of society therefore acknowledges sentience, agency and community as widespread in the natural world, not confined to humanity. This will help us not only to understand but also to feel ourselves as part of an “ecology of selves.”

Chapter 16: The Transformative Power of Stories

Here I expand on the role of narrative in enabling us to move from a “system society” to a “social society” by means of changing ethical values through stories. As viewed through Peirce, our values are shaped by our feelings and the formation of habits. I discuss this in the context of the imagination and the role of narrative in shaping our feelings and therefore our values. As semiotic distortion is embedded in the model of the world that most of us carry, I argue that this transformation can be accomplished through the development of a polyphonic narrative that gives a voice to all of nature, and this narrative needs to point to the future.
Chapter 17: Anticipating the Worst, and the Best

In this chapter I discuss how anticipatory systems, as models, enable us to predict the need for change and implement changes in behaviour. I argue for the importance of visions of the future, expressed in narratives, that enable us to have not only a rational understanding of what we want (and do not want) from our society, but also a feeling for these visions and an emotional connection to them. Ideas of both dystopia and utopia are viewed as models springing from a set of assumptions contained in an ideology, but their power to reveal these assumptions and to influence change in the underlying ideology are also explored. I argue how change can be accomplished, not by the imposition of order and regulations, but by a process of dialectic with these visions, incorporating a persuasive rhetoric, firmly founded on Peircian metaphysics.

Chapter 18: Ecological Civilisation as Utopia

Ideology is most effective when all citizens – in this case all citizens of the semiosphere – have had a role in its formation. However, to bring into question existing beliefs and practices and provide new ideals to aspire to, utopian ideas are also necessary. This is particularly important in the present where the prevailing ideology has been revealed to be fundamentally defective, but people have lost their capacity to envisage any viable alternative to the present order. In this chapter I summarise the utopian vision of an ecological civilisation based on Peirce’s Categories of Being, considering its ethical basis, as founded on a natural aesthetic, and the role that reason and rationality would play in an ecological civilisation.

Chapter 18 is followed by a Conclusion to the thesis.
Part 1 A Metaphysical Solution for an Ideological Problem

“All disputes of antiquity and modern times, up to the most recent time, are caused by the division of that which in its nature God has produced as one whole.” — Goethe, Analyse und Synthese\(^7\)

Introduction to Peirce's Metaphysics

THIS SECTION POINTS TO the pervasiveness of dualistic thinking, combined with a mechanistic, reductionist approach to the study and understanding of nature, as a fundamental reason for our dysfunctional relationship with the rest of the natural world and as the major obstacle to the achievement of an ecological civilisation. I argue that John Dewey is correct, when he notes that “dualism of mind and matter, of a physical and a psychical world from the day of Descartes to the present dominates the formulation of philosophical problems.” And I discuss how this dualism has been codified in ideology, communicated, maintained and even concealed through the use of signs and symbols, and thus is ideally suited to study through a semiotic lens.

I also present the dominant ideology as neoliberalism, founded and maintained by the tacit acceptance of dualistic thinking, and consider its character and the impact this has had on human society and our relationship with the rest of the natural world. In this section I also argue that a radically anti-dualistic metaphysical system needs to form a foundation for an ecological civilisation, as this is the only way to counteract the dualistic thinking that pervades our present society and prevents the establishment of a civilisation that sees humanity as part of nature rather than separate from it. I therefore introduce the metaphysical system of C. S. Peirce, including his Categories of Being, Semiotic and Synecchism, looking also at its heritage in the work of the Romantic movement in general and von Schelling in particular.

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Chapter 1: Dualism’s Raw Wound

This chapter introduces the major assertion of this project: Dualism and its associated propositions are the source of humanity’s disconnection from the rest of nature. Dualism is recounted as arising from Descartes’ work, based on some earlier thinkers and, along with the ideas of Newton and his contemporaries and heirs, forming the foundation of understanding of nature. The impact of dualism’s separation of sentience and agency from the physical world is described, and I argue that this has led to the dominant worldview as being distorted, nihilistic and detached from the experience of nature, and this has produced a “wicked problem” that is destroying the conditions for life on earth. This disconnection, or as I shall describe it, “the disenchantment of nature,” has contributed to the rise of nihilism in society, and has helped to form the dominant ideology of neoliberalism and without regard to the consequences of this view, this ideology sustains and strengthens it. I also examine the utility and limitations of our current dualistically based methods of acquiring and applying knowledge of nature.

The Dawn of Dualism

THE COMPLEXITY AND COHESIVENESS of the “wicked problem” as described in our introduction indicates that it has a substantial foundation upholding some very influential ideas. As I argue, this foundation is a faulty view of the world and of our relationship with the rest of nature. This world view is based on some fundamentally erroneous assumptions, and I argue that this has led to a crisis of knowledge — not insufficient knowledge, but a flawed understanding of what constitutes knowledge, how it is acquired, and how it is justified as truth. Luis Bruni, after Gregory Bateson, notes that if
there is a crisis, it is not just ecological but also epistemological, steeped in deep-seated values and fundamental errors in our way of thought, our rationality, our reason.⁴⁹

This epistemological problem is a major reason why it is so difficult to identify and correct the problem of our relationship with the rest of nature. As Bateson asserts:

> It is not only the ecosystem that is in crisis (although it manifests the consequences of such a crisis) but deep-rooted cultural values… [C]ircuits and balances of nature can only too easily get out of kilter, and they inevitably get out of kilter when certain basic errors of our thought become reinforced by thousands of cultural details (Italics added).⁵⁰

And the fundamental, foundational “basic error” is that of dualistic thinking.

Fundamentally, dualism is the belief “that there are two distinct explanatory principles in our world, mind and matter.”⁵¹ From this simple division flows a host of consequences in belief and action. Dualism is usually associated with René Descartes (1596-1650), and its formulation as a philosophical tenet is also linked with many thinkers contemporary with Descartes, but some dualistic conceptions even pre-date Descartes. For example, the metaphysics of Plato (428-348 BC) took a strong position on the nature of reality, positing a realm of ideas, separate from the world that we experience directly, and this helped to lay the foundation for later dualistic conceptions of the natural world.

Wheeler suggests that “[Dualism’s] roots probably lie…in the historical convergence of neo-Aristotelianism with Platonic idealism and Christian idealism in the Middle Ages.”⁵² Just prior to Descartes, and likely influential on his thinking, Francis Bacon’s Novum Organon — the “new instrument” (as opposed to Aristotle’s “old” Organon) —

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also formed part of the foundation for dualism. Published in 1620, 20 years before Descartes’ work, it announced the inherent futility of reliance on “the mind [which], by the daily habit and intercourse of life, has become prepossessed with corrupted doctrines, and filled with the vainest idols.” Bacon saw this as an error to be corrected, and thereby to make unreliable nature into something more dependable, predictable and controllable. He argues:

Our only remaining hope and salvation is to begin the whole labour of the mind again; not leaving it to itself, but directing it perpetually from the very first, and attaining our end as it were by mechanical aid (italics added).

This also implies that the only way to understand something complex is by breaking it into the smallest possible component parts and determining how action and reaction enable them to work together, as in a mechanism — another aspect of this epistemological crisis of our knowledge of the natural world.

Bacon’s widely accepted view ensured that humans could justifiably view the world and its inhabitants as mere objects to be studied and to be used only to promote the interests of humans. They are treated as so many “natural resources,” rather than, as Coffman and Mikulecky describe it, “sympathetically as subjects in their own right [and as] agents with ends of their own.”

Bacon’s approach was supported by Robert Boyle’s (1627-1692) foundation of “public science,” and with the establishment of *The Royal Society of London for Improving Natural Knowledge* in 1660 it was made clear that what could not be shown in the laboratory was not to be considered as true knowledge of nature. This established oversight of the material realm, and to cement this control Isaac Newton (1643-

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54 Coffman and Mikulecky, *Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World*, p.31
1727) added to this visible realm the pure and immaterial truths of mathematics thereby, as Favareau puts it, “vindicating Descartes[′ dualism].”

Descartes’ rationalism (after Plato) well complemented Bacon’s empiricism (after Aristotle), and he therefore institutionalised a division between subjective self and objective other by arguing that mind (also known as soul, spirit, or in Greek, psyche) and body, (matter, or Greek soma) are completely different substances that combine to form a human being. Providing further licence to an often exploitative view of non-human animals as fundamentally different, these were seen as purely mechanical bodies, without mind or soul. In this Cartesian universe free will, agency, creativity, if they exist at all, are attributable to a realm separate from this mechanistic one. And to paraphrase Voltaire, if this other realm did not exist it would be necessary to invent it, as without it life would lose all meaning.

Thus, dualism was first used to enable the division of agency and free will in humans (and other natural agents) from a mechanistic and reductionist view of nature. And Peter Harries-Jones adds to these examples of the pervasiveness of dualistic thinking:

[M]ind separate from matter, body separate from mind, environment separate from cultural tradition are among the most conspicuous of these myths in both science and the humanities, as too, is the practice in science of separating of parts from the whole.

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56 Coffman and Mikulecky, *Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World*, p.32
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Dualism, as I shall argue, is so deeply embedded in the dominant way of thought that it has become almost invisible and it is difficult to convince those who (often without awareness) follow its tenets that is is so pervasive in our culture. How did this attitude come to pervade (initially Western, and now global) civilisation? We can easily discern the accuracy of Dewey’s observation that this dualism spread into

...other dualisms such as that between sensuous appetite and rational thought, between the particular and universal, between the mechanical and the telic, between experience and science, between matter and mind, [all of which] are but the reflections of this primary meta-physical dualism.\(^58\)

Mathews mentions still other dualisms, and suggests that,

This conceptual system drew on earlier dualistic categories, and continually spawned new ones, and these categories *structured the very core of Enlightenment thought*. They included spirit-matter, culture-nature, civilization-wilderness, theory-experience, sanity-madness, purity-corruption \(^59\).

The fundamental assumptions behind dualism, and its influential character, continue to be refined and reinforced up to our day. On the back of dualism there has developed what Bruni calls a “combination of mechanistic biology, genetic reductionism, economical determinism and neo-Darwinian cultural and biological perspectives.”\(^60\) So dualism divided humanity from the rest of the world, which, although enabling the acquisition of vast amounts of empirical data and the application of this to the control of natural processes, provided a foundation for an instrumental rationality which has led to the exploitation of the natural world.

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\(^58\) Dewey, *Experience and Nature*, p.150


\(^60\) Bruni, “Biosemiotics and Ecological Monitoring”, p.298
When Descartes tore the mind from the body, he placed agency, emotion, experience, all aspects of human subjectivity, in their own, divinely-ordained realm. The metaphysical dualism echoes Plato’s view that the material world of matter and the abstract world of ideas constitute two separate realities, which leads to the conclusion that humans, as conscious, creative, agentic, living actors are separate from nature, which is mechanistic, deterministic and, at a fundamental level, merely a complex arrangement of inanimate objects moved by external forces.\footnote{Coffman and Mikulecky, \textit{Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World}, p.43}

But the realm of subjective experience is, by this definition, outside the reach of scientific enquiry. With the dominance of the empirical side of this division, the dualist/reductionist/mechanistic outlook has ensured that subjectivity simply has no place in this world of science. Knowledge is based solely on what can be classed as objective and can be measured and therefore, it is assumed, controlled — or at least causally explained — for the purpose of humanity’s benefit. Understanding causation has been relegated to understanding component parts and their action and reaction to external stimuli. Coffman and Mikulecky note the implications of the externalisation of causality:

> [S]ince subjective self is usually reserved for “me and those like me”, it requires only a short step of ex post facto rationalization to move from “knowledge is power” to “might makes right” [and s]cience became a means to dominate Nature, [in the words of Bacon] “to conquer and subdue her, to shake her to her foundations.”\footnote{Ibid., pp.32, 34}

To apply Bacon’s misogynistic and often violent metaphors, science enabled the rape of the earth by human civilisation. But what led to this proliferation of dualistic thinking and its use in the exploitation of nature? In this new “scientific” model of the world, mind — along with its agency and experience — becomes a seemingly insoluble
problem. Therefore, if it can be relegated to the realm of the supernatural, outside and above the rest of the natural world, then it can be ignored, and the focus turned to the “objective,” measurable part of the world that is left over. This bifurcation crippled both of the newly created halves of what was once a cohesive whole, and created a new set of unfounded and dysfunctional beliefs. Bateson well describes the result as leaving “[r]aw edges…on both sides” and he suggests that “materialistic science has concealed this wound by generating its own set of superstitions.” These “superstitions” of science have exacerbated the problem and allowed it to bleed into economics and therefore ecology. As Bateson describes it, this “is the belief not usually stated that quantity (a purely material notion) can determine pattern, [and this is] a basic premise in contemporary economics and therefore one of the factors which determines international chaos as well as ecological disaster on the home front.”

This focus on the measurable to the exclusion of agency and experience has led to an ethic of exploitation which has spread to include the oppression of most humans by a wealthy and powerful elite, particularly through the dominant political and economic ideology of neoliberalism, which I will discuss in more detail later. As Bruni notes, in support of our central argument about the harmful impact of dualistic thinking on our relationship with the rest of nature:

Modernity has produced some cultural premises which have determined an ecological crisis. Among these premises figures the environmentalist’s myth of an external environment that we have to save without questioning the cultural aspects that have compromised it. This is how we end up developing a cultural-institutional-technological web for the sustainable management of global biodiversity based almost exclusively on the epistemological scaffolding born from the very process of modernity that in the first place has determined the cultural-ecological crisis.

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63 Bateson and Bateson, Angels Fear: Towards An Epistemology of the Sacred, p.59
64 Bruni, “Biosemiotics and Ecological Monitoring”, p.299
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So let us now examine how dualistic thinking and its associated ideas impacted our view of nature, and why this is so important to this project.

The Disenchantment of Nature

As I have discussed, Bacon, Descartes, Boyle, Newton, and their successors combined “metaphors, metaphysics, and math”\(^65\) to fully externalise the idea of causality. Despite a general acceptance of the idea of free will, in scientific terms causality has been fully externalised; everything has been divided into a self that is a thinking, feeling and agentic subject, and everything else that is an object to be operated on according to our will, and therefore “other” from our experience. And Berman summarises the outcome as

\[\text{…a feeling of total reification: everything is an object, alien, not-me; and I am ultimately an object too, an alienated ‘thing’ in a world of other, equally meaningless things. This world is not of my own making; the cosmos cares nothing for me, and I do not really feel a sense of belonging to it. What I feel, in fact, is a sickness in the soul.}^{66}\]

Materialistic, positivistic science devalues experience, and a focus on what is measurable takes attention away from that which cannot be counted, the immeasurable experience of the world. And Dewey goes on to describe the impact of the focus on the measurable as

\[\text{…discovery of the indifference of natural energies to the production of good and bad endings… The logical result was to cut off “consciousness” as the collectivity of immediate qualities, from nature, and to create the dualism of physical nature and mind which is the source of modern epistemological problems.}^{67}\]

\(^{65}\) Coffman and Mikulecky, *Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World*, p.34

\(^{66}\) Berman, *The Reenchantment of the World*, p.2

\(^{67}\) Dewey, *Experience and Nature*, p.139
As I argue here, this dualism has not just separated our experience of the world from the “scientific” understanding of it, it has left a gap, bounded by a ragged edge between the two parts of the whole that Descartes divided. This rupture prevents the reuni-

ification of subject and object, and becomes a obstacle, not only to understanding, but also of our felt sense of being part of the natural world. As Timothy Morton describes it:

Nature is “over yonder”; the subject is “over here.” Nature is separated from us by an unbridgeable ontological wall, like a plate glass window — plate glass was the Romantic-period invention that enabled shops to display their wares as if they were in a picture frame, and therefore belonged to another order of reality.68

Morton suggests that our separation from nature — and he uses the concept of “ecological thinking” or “the ecological thought” to illustrate that our separation has created a whole discipline focussed on the idea of humans as separate from the ecosystems they “inhabit” — “is the latest in a series of great humiliations of the human.” He refers to examples from

…Copernicus through Marx, Darwin and Freud [which conceive of humans as] decen-
tered beings, inhabiting a Universe of processes that happen whether we are aware of them or not, whether we name those processes “astrophysics,” “economic relations,” “the unconscious” or “evolution.”69

But this is not only a humiliation of the human but a degradation, in fact a disenchantment of all of nature.

In Peircian terms the removal of experience and feeling from our understanding of the world removes the very basis of its existence, as Peirce’s Category of Firstness, as shall discuss in more detail later, is the raw, unevaluated feeling from which all material existence flows. And this puts humans, not as creative participants in the ecosystem, but merely

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69 Ibid., p.265
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as passive components of it, at the mercy of forces outside themselves. This “disenchanted” view, as Friedrich Schiller termed it, also carries the implications that experience, and therefore emotion, plays no real role in nature or anywhere in the universe. As Griffin describes it, this removes the role of “purposes, values, ideals, possibilities, and qualities, and there is no freedom, creativity, temporality, or divinity...everything is ultimately meaningless.” If, as Schiller suggests, nature — or at least our view of it — has been “disenchanted” by the privileging of rationality in modern science, has this impacted our view of our place in the world and contributed to our ruinous treatment of our home? If the answer is in the affirmative, is a “reenchantment” possible? And what impact can this have on the development of an ecological civilisation?

This term “disenchantment” stems from Max Weber’s use of the German word Entgoterung which literally means the removal of the divine. The claim that the world had been disenchanted was further developed by Weber who used the term Entzauberung. The German word Zauber is translated as magic, therefore this refers to the removal of magic and mysticism from all concepts of nature. This fundamentally means to strip out from nature all consideration of creativity, agency, subjective experience and feeling, leaving it as essentially a mechanism, in line with the views of Descartes, Boyle, Newton, and their heirs, who defined knowledge as the outcome of quantifiable observation, this casting the Divine as a being external to the natural world, as super-natural.

From this perspective, the Divine set the world in motion, and imposed “natural” laws upon the world from outside. John Cobb describes “the universe of classical physics”

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72 Griffin, The Reenchantment of Science: Postmodern Proposals, p.2
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as “a vast and eternal machine, composed of indestructible particles of matter, propelled by indestructible energy, and governed by changeless mathematical laws,” and he describes how Boyle contributed to this view of the world by opposing the magical tradition because it united God with matter in a theologically unacceptable way. Boyle attributed all agentic action to the external Divine Being, and cast the physical world as completely passive in relation to God. This is one of the factors that has led to a “system society” based on a culture that privileges rationality — and this leads to “dead” knowledge in the sense that it is reductionist, mechanistic and deterministic, with all subjectivity or “enchantment” cast out.

David Ray Griffin describes the impact of this when he argues that, although “the mechanistic, disenchanted philosophy of nature…was originally part of a dualistic and theistic vision of reality as a whole,” the success of the modern, scientific worldview

…eventually led to the disenchantment of the whole world [and most] fundamentally, [this] means the denial to nature of all subjectivity, all experience, all feeling. Because of [this]…no intrinsic value can exist within nature, no value of natural things for themselves. Also, unlike the way our experience is internally affected, even constituted in part, by its relations with its environment, material particles can have no internal relations.

Morris Berman suggests that this dualistic foundation is pathological, schizoid. He explains:

Schizophrenics typically regard their bodies as “other,” “not-me.” In Descartes’ [view] too, brain (inner self) is the detached observer of the parts of the body; the interaction is mechanical, as though one saw oneself behaving as a robot — a perception that is easily

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74 Ibid., p.103
76 Griffin, The Reenchantment of Science: Postmodern Proposals, p.190
extended to the rest of the world. To Descartes, this mind-body split was true of all perception and behaviour, such that in the act of thinking one perceived oneself as a separate entity “in here” confronting things “out-there.” *This schizoid duality lies at the heart of the Cartesian paradigm* (italics added).

And Berman continues, referring to dualism, and the “technological culture that religiously adheres to it” as the cognitive expression of a profound biopsychic disturbance.”

In his recent book *The Master and his Emissary: The Divided Brain and the Making of the Western World*, Iain McGilchrist argues on the basis of his research in neuroscience that our current perception of the natural world reinforces and reflects an imbalance between the brain hemispheres that has emerged particularly since the Industrial Revolution. McGilchrist supports Berman’s view as stated above when he notes that schizophrenia, a mental condition often associated with deficiencies in right hemisphere processing, has many striking similarities to what he sees as our dysfunctional relationship with the world. For example, “disembodiment,” echoing the split that Descartes posited between body and mind, is a predilection of the left hemisphere that is often experienced by schizophrenics. Schizophrenia is, McGilchrist asserts, a relatively modern condition, likely existing only since around the 18th century.

Thus, dualism, through its transformation into a reductionist monism, has had a devastating impact on our relationship with nature, with experience and agency excised from our understanding of the natural world. But what has rushed in to fill this empty space where subjectivity once dwelled, and what has replaced the enchantment of nature, the “magic” that enabled agency and experience? I argue that it is nihilism.

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77 Berman, *The Reenchantment of the World*, pp.19, 111
79 Ibid., p.404
Emptiness: A Space Filled With Nihilism

If the only values are those that can be considered as part of the empirical component of a part of a vast mechanistic universe, then the other part of the dualistic division — that which is agentic, emotive and relational — becomes valueless, irrelevant and disposable. This has led to a nihilistic viewpoint that pervades human society, as Griffin explains: “There are no norms, not even truth, and everything is ultimately meaningless.”

Despite, or perhaps because of the successes of the mechanistic, “scientific” world view, most people would agree that what could not be shown in the laboratory is not real “science” and therefore that which is experienced is of lesser value than that which can be measured and controlled. When the validity of experience and the possibility of agency was torn from our understanding of the natural world, something needed to be found to restore certainty, and provide a foundation for existence as we experience it. But if experience is valueless, then our measure of what is of value needs to be found somewhere else. As Hornborg describes it:

The distinction between “material” and non-material aspects of human life is a reflection of the Cartesian compulsion to find a bedrock of unquestionable truth with which to fill the void left by crumbling, pre-modern certainties. It seems revealing that synonyms for “material” include “essential” and “relevant”, whereas the word “immaterial” is generally used to mean “unessential” or “irrelevant”. We may in fact have been using the category of “material” prescriptively, to cover that which is beyond question and once and for all given.

When we see the contempt in which the non-human part of our earthly home is held, we can see the visible impact of this invisible rift. Berman agrees, warning that the dominant views enabled by this division

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80 Griffin, The Reenchantment of Science: Postmodern Proposals, p.190
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...have finally come to represent the most unecological and self-destructive culture and personality type that the world has ever seen. The idea of mastery over nature, and of economic rationality, are but partial impulses in the human being which in modern times have become organizers of the whole of human life.\(^{82}\)

Even a casual glance at mass media, or a walk on the street, shows us that the impact of “economic rationality” as an “organizer of the whole of human life” includes the political reverence accorded to “market forces,” the fragmentation of beliefs and identities by post-modernism, and the “mastery over nature” becomes the threat of “global ecocide,” all of which combine to form a tremendously “wicked problem.”\(^{83}\)

We might imagine that the study of human thought processes could help us expose this way of thinking as harmful, and help us to find an escape from this dualistic vice. But Griffin refers to the mid-20\(^{th}\) century behaviourist psychology of B. F. Skinner, who

...argues that psychology must follow physics and biology in rejecting “personified causes,” and that to be “natural” is to be completely determined by one's environment.

Human agency and creativity is dismissed by Skinner, as he describes “the notion of the ‘autonomous,’ which ‘initiates, originates and creates,’ [as] the notion of the ‘miraculous.’”\(^{84}\) And the identification of the foundational assumption on which this is based? In the words of Skinner:

We cannot apply the methods of science to a subject matter which is assumed to move about capriciously...The hypothesis that \textit{man is not free} is essential to the application of scientific method to the study of human behaviour (italics added).\(^{85}\)

\(^{82}\) Berman, \textit{The Reenchantment of the World}, pp.19, 111
\(^{84}\) Griffin, \textit{The Reenchantment of Science: Postmodern Proposals}, p.192
And although a purely behaviourist psychology is now widely rejected, the reductionist, mechanistic viewpoint remains as a basis of the “scientific” study of mental functions and behaviours, and the idea of the world — including fellow humans, other animals, and all of the biosphere — as a dead, deterministic, machine removes the basis for any empathetic connection with the rest of nature. As Coffman describes it, the casualties of the...

...presumption that the world is nothing more than an objective mechanism that can be controlled at will, given sufficient technological knowledge [include] empathy, the very foundation of morality (italics added).\footnote{Coffman and Mikulecky, \textit{Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World}, p.131}

This mechanistic-reductionist world view, founded in dualism, has had significant negative consequences for our relationship the natural world and with each other as fellow humans. It has resulted in the widely accepted and institutionalised view that the world and its non-human inhabitants are objects to be studied and used to promote the interests of humans, and even fellow humans should be treated merely as a means to an end. But we need to acknowledge that Cartesianism is a double-edged sword and we cannot ignore the fact that this approach to understanding nature has been, in some respects, very successful, and therefore one of the reasons for the endurance of the dualistic view is its utility.

\textbf{Dualism: Utility and Limitations}
As we look to the pervasiveness and longevity of the dualistic understanding of nature and our relationship with it, we cannot deny that modern science has enabled great accomplishments. Marcello Barbieri notes that

...armed with the error-correcting mechanisms of induction and deduction — and with the exponential power of a group of interacting agents pursuing individual ends within the telos of a formalized system — the study of “bodies” and their material relations would allow human beings to actually leave the planet and return to it in less than another 300 years.  

One of the keys to this achievement, and many others, has been to combine empirical enquiry with the abstraction Descartes offered by separating the objectively measurable from that which is subjectively experienced — ideas that were later developed by John Locke when he suggested that the material world is differentiated by primary and secondary qualities, another division of the experienced from the measurable. As Dewey observes:

Thus the abstract and technical Cartesian dualism found prepared for it a rich empirical field with which to blend, and one which afforded its otherwise empty formalism concrete meaning and substance.

We can consider an example that highlights not only the benefits of this dualistic/mechanistic view of the world that have reinforced its use, but also its inadequacy for addressing issues that are irreducibly complex. This can be seen in the history of antibiotic use. Naturally occurring antibiotics have been found in human skeletal remains that date from the 4th Century and they may have been used for millennia in traditional Chinese medicines. And although the first hospital use of a drug that today we would name an

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87 Favareau, “The Evolutionary History of Biosemiotics”, pp.558, 559
89 Dewey, Experience and Nature, p.278
antibiotic was in 1899, it was not until investigations by Paul Ehrlich, later Alexander Fleming, and then by Howard Florey and Ernst Chain in the early and mid 20th Century that the use of penicillin and sulfa drugs became widespread in the treatment of infectious disease. Indisputably, millions of lives have been saved by these and other subsequently developed antibiotic drugs. However, the development of antibiotic-resistant bacteria was flagged even by Fleming as a possibility of which the medical profession needed to be wary.

Now, less than a century after its initial discovery, both the range and resilience of antibiotic resistance has been steadily growing, until we are now facing what many authorities call a “post-antibiotics future.” This “future” is already having a large impact. According to a report by the US Center for Disease Control,

…world health leaders have described antibiotic-resistant microorganisms as “nightmare bacteria” that “pose a catastrophic threat” to people in every country in the world.90

Each year in the United States alone, at least two million people acquire serious infections with bacteria that are resistant to one or more of the antibiotics designed to treat those infections, and at least 23,000 people die each year as a direct result, with many more dying from other conditions that were complicated by an antibiotic-resistant infection. Annually, in the countries of the European Union, about 25,000 patients die from an infection caused by these bacteria, and by 2050 the number of deaths from this cause world-wide is expected to reach ten million, exceeding the current number of deaths from cancer.91

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90 Centers for Disease Control and Prevention, (US Department of Health and Human Services, Atlanta, GA, 2013).
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Can this be seen as a consequence of the dualistic-mechanistic view of life as applied to the process of scientific enquiry?2

What we can observe is that the undeniable success of the early use of antibiotics established norms for future research methods and their application. As Rustan Aminov notes, “[t]he discovery of [the] first three antimicrobials…was exemplary, as those studies set up the paradigms for future drug discovery research (italics added).”92 This research approach to the discovery and development of new drugs is referred to in terms of analogies with “targets” and “bullets,” words that seem to reflect a mechanistic, reductionist approach to health which Descartes, Newton and their heirs would well understand. But now some researchers seem to be recognising that this “paradigm” is inadequate and are moving to an approach that broadens the scope of enquiry beyond the individual mechanisms involved.

As Aminov continues, “Recent works in the area of antimicrobials and resistance suggest that not all interactions of bacteria with antibiotics can be explained within the frames of the classical bullet-target concept.” Aminov suggests that a more successful metaphor would be one that brings the idea of complexity and community into the field of microbiotics and instead treat what might be seen as a “human ecosystem”:

[A] recent work on novel antibiotic resistance mechanism used the ‘kin selection’ concept, since this resistance mechanism operates at the population/system level… [I]n complex biofilm consortia, the protection against antibiotics is offered to all community members, irrespectively of the kinship, which requires a conceptual framework operating at the system level (italics added). Thus the conceptual base of microbe-antibiotic interaction has been broadening beyond the bullet-target model to reflect the complexity of these interactions.93

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93 Ibid., p.3
Ignoring the complexity of interacting biological systems has led to spectacular but short-lived gains, as seen in this example of a mechanistic, reductionist approach that has had enormous success, but is now under threat of complete collapse and an imminent return to the pre-antibiotic era. Indeed, as this example shows, the combination of empiricism and abstraction that has brought such great gains in the areas of human accomplishment is a very mixed good. As Mathews notes,

Modern civilisation justifies itself in terms of its ability to change the world, to improve it, to bring about progress. This is its appeal, its seductiveness: it promises to abolish poverty, disease, hunger, all kinds of disadvantage. It does so by destroying the old, by replacing that which already exists with a rationally and abstractly conceived new. It is plain to see, however, that such a regime of continual replacement leads to a kind of generalized falling apart. People’s standard of living may indeed increase, but around them their environment unravels: the fabric of community and nature ceases to cohere.  

But is it only the successes of dualism that have contributed to its longevity and strength of influence? Let us consider also its support in ideology, and the strength, resilience and occult nature of these underpinnings.

The Invisible Infection of Ideology

As we consider how this dysfunctional relationship has become so pervasive, so difficult to identify, and so hard to repair, it is relevant to examine the concept of ideology. The “modern epistemological problems” as Dewey terms them — that we have discussed, are rarely even seen as problems, and their dualistic foundation is even more obscure to most people. As the highly influential economist John Maynard Keynes summarised:

95 Dewey, *Experience and Nature*, p.139
[The] ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back.96

Keynes’ observation, that “voices in the air” are influencing economic theories and political policies, suggests that the influence of metaphysical underpinnings are neither acknowledged nor recognised and thus, in a very real sense, the pervasiveness of dualism — and its support in ideology — is invisible. This attitude pervades all modern scientific enquiry, even though it may not be explicitly stated or acknowledged. Dualism has tacit acceptance in scientific thought and political action, particularly in many forms of so-called ecological thinking which separate humanity from nature, putting us “in” the environment, and it also forms the basis of the dominant ideology of our current civilisation.

As I will argue with regard to the often hidden influence of ideologically-driven thinking, the communication and maintenance of ideology is facilitated by the use of signs and symbols, whose meaning is often not explicitly stated, but nevertheless implicitly understood by those who live within the society that is shaped by the ideology. And this means that, although dualistic thinking is not commonly acknowledged, nor even consciously considered as influential by most people, nevertheless it pervades our culture and shapes our cognition of the world. Even in the 19th Century, the idea of the mind in the Cartesian view as something accessed via the pineal gland was not explicitly accepted as fact, but nonetheless was highly influential. As Peirce himself observes:

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Everybody laughs at this [idea] nowadays, and yet everybody continues to think of mind in this same general way, as something within this person or that, belonging to him and correlative to the real world (CP 5.128).

This is the same in our 21st Century. As Mathews notes,

Although postclassical physics no longer subscribes to a narrow form of mechanism, in that it has admitted additional, nonmechanical forces and indeterministic laws into its cosmology, it is still dualistic in the sense that mentalistic attributes, such as subjectivity, self-presence, awareness, intentionality, purpose, and meaning, are regarded as emergent phenomena, that do not belong to the fundamental nature of physical reality…

Although few Western philosophers, and even fewer scientists, these days subscribe to a dualistic theory of mind, in the sense of regarding mind as existing independently of matter, most philosophers, scientists and persons in modern streets retain dualistic presupposition. […] This externalized, deanimated conception of nature finally came fully into its own and became the major metaphysical premise for Western civilization (italics added) \(^97\)

And Alexander, to whose work shall return later, suggests that,

…whether or not we are subscribing to this [mechanistic-rational] world picture, whether or not we are aware of the impact of its residue on us…, most of us are still…in the grip of…this…world-picture. Like an infection it has entered us, it affects our actions, it affects our morals, it affects our sense of beauty. \(^98\)

This “infection” that Alexander identifies impacts even our cognitive processes. If we feel that a subjective “I” exists in a realm separate from the body as a robotic object, then this perception is likely to alter our view of the rest of the world. It is interesting that Alexander mentions action in the context of morality and beauty, or aesthetics. These connections are in line with Peirce’s metaphysical system and will discuss this in more detail later.

\(^97\) Mathews, *For Love of Matter: A Contemporary Panpsychism*, pp.26, 76

Later, will examine the development, maintenance and possibility of ideological change using the semiotics of Peirce. However, first I shall consider the meaning and function of ideology. Talcott Parsons defines ideology as

“a system of beliefs, held in common by the members of a collectivity,...which is oriented to the evaluative integration of the collectivity, by interpretation of the empirical nature of the collectivity and of the situation in which it is placed, the processes by which it has developed to its given state, the goals to which its members are collectively oriented, and their relation to the future course of events.”

And ideology is discussed now in terms of Paul Ricoeur’s definition of ideology as part of the symbolic structure of social life, where ideology functions to integrate a society, bringing its members together around a common understanding of the world and their place in it.

Ideology, according to Ricoeur, enables us to “understand how we live, do things, and project these activities in ideas.” This would include our understanding of the relationship we have with the rest of the natural world and its inhabitants. As Ricoeur explains it:

Action is immediately ruled by cultural patterns which provide templates or blueprints for the organization of social and psychological processes... In the same way that our experience of the natural world requires a mapping, a mapping is also necessary for our experience of social reality.

Both our “experience of the natural world” and “our experience of social reality” are mediated by what Webb Keane calls a “semiotic ideology,” which shapes our understanding of what can be considered as a sign of agentic intention. This would include, as Keane suggests, our beliefs about “what kinds of possible agent (humans only? Animals?...
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Spirits?) exist to which acts of signification might be imputed.” And in a dualistic understanding of nature, “acts of signification” and therefore agency, are separated from the rest of the natural world. This is exactly what I seek to address in this project, by showing the damage that dualistic thinking has done to our recognition of the importance of signification in our knowledge of experience and agency in nature.\textsuperscript{102}

However, Ricoeur, after Marx, also argues that ideology serves to distort and conceal the foundation of the structure of social life. As Ricoeur observes, “Ideology moves beyond mere integration to distortion and pathology as it tries to bridge the tension between authority and domination.”\textsuperscript{103} As with any social structure, it is maintained through relations of power. Dieter Plehwe \textit{et al.} note that these relationships of hegemonic power “find expression in coalitions and compromises designed to integrate diverse social forces into (asymmetrical) historical power blocs.”\textsuperscript{104} And part of the “integrative” function of ideology, according to Ricoeur, is to justify the power wielded by the existing authorities to maintain the status quo.\textsuperscript{105} These observations give some indication of the difficulty in changing people’s often unconscious adherence to an ideology, particularly when the underpinnings of the ideology are not explicitly stated or even understood.

In an interesting example of how ideology fixes ideas as it relates to our discussion of an ecological civilisation, Dan Kahan recently published the results of an empirical study of what he refers to as “ideologically motivated reasoning,” a form of cognitive processing that promotes the interests of individuals in forming and maintaining beliefs

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\item [\textsuperscript{103}] Ricoeur, \textit{Lectures on Ideology and Utopia}, p.14
\item [\textsuperscript{104}] Dieter Plehwe, Bernhard Walpen and Gisela Neunhöffer, \textit{Neoliberal Hegemony: A Global Critique} (Abingdon: Routledge, 2006), p.2
\item [\textsuperscript{105}] Ricoeur, \textit{Lectures on Ideology and Utopia}, p.13
\end{itemize}
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that reinforce their identity as members of groups. This is particularly significant in the context of climate destabilisation, where beliefs about the cause of this phenomenon provide an example of the futility of relying solely on rationality to impact beliefs and behaviours, and where groups form around ideologies which shape their attitude to the problem. Kahan identifies “the ubiquity and ferocity of ideological conflicts over facts that turn on empirical evidence” and provides the example that “Democrats (by and large) fervently believe that human activity is responsible for global warming, Republicans (by and large) that it is not.” And in an indication of the difficulty in identifying ideological significations, he goes on to observe that

…political polarization on empirical issues like these occurs not only despite the lack of any logical connection between the contending beliefs and the opposing values of those who espouse them. It also persists despite apparent scientific consensus on the answers to many of these disputed questions.106

In fact, Kahan found that those participants in his study who engaged most fully in “conscious and effortful” thought and reflection on the facts about the cause of climate destabilisation were also those most likely to come to a conclusion that was based, not on these facts, but on their ideological viewpoint. This supports the assertion of Parsons, that beliefs are oriented to evaluation and interpretation “of the empirical nature,” thus empirically supported “facts” are seen, as it were, through ideology.

These findings are highly significant, as Kahan concludes, for under these circumstances

…it is (often if not always, and with respect to many if not all issues) individually rational for ordinary members of the public to attend to information in a manner that reliably connects them to the positions that predominate in their identity-defining groups.

107 Ibid., p.416
This defies what we see as “reason” in more than one way, as

...if ideologically diverse individuals all follow this strategy simultaneously, they will be collectively worse off, since under these conditions, democratic institutions are less likely to converge...on policies that [are likely to] protect everyone from harm.

Therefore, even if a course of action is self-destructive to a society, and members of that society have free access to the relevant facts about it, this is not enough, in itself, to prompt change. Our institutions shape our actions and even our thinking in powerful and subtle ways. They help to determine what we see as important, what we value, and even impact how we feel — our emotional engagement — about issues and relationships.

As the British anthropologist Mary Douglas observes:

...even the simple acts of classifying and remembering are institutionalised [and] institutions direct individual memory and channel our perceptions into forms compatible with the relations they authorise; [institutions] fix processes that are dynamic, hide their influence and rouse our emotions to a standardised pitch on standardised issues; they endow themselves with rightness [and this means that] individuals tend to leave the important decisions to [their] institutions while busying [themselves] with tactics and details.\textsuperscript{108}

As I shall argue in more detail later, challenging what seems to the individual as rational thought, and questioning the ideas that they feel they have independently arrived at, produces a visceral, emotional reaction that opposes change, and this needs to be addressed in this project. Douglas, after Emile Durkheim, notes that

...the sense of a priori rightness of some ideas and the nonsensicality of others are handed out as part of the social environment [and] the sense of outrage when entrenched judgements are challenged is a gut response directly due to commitment to a social group (italics added).\textsuperscript{109}

\textsuperscript{108} Mary Douglas, \textit{How Institutions Think} (Syracuse, NY: Syracuse University Press, 1986), pp.67, 92, 111
\textsuperscript{109} Ibid., p.10
But how is this “commitment” to the dominant view of nature maintained by ideology, and what form does this take today? This commitment is sustained by the political and economic underpinnings, including institutions, as well as political and social structures which are also associated with this dualistic split. As Wheeler suggests, the bifurcation of subject and object, “was fed by the individualistic world view we inherited from the development of liberal philosophy in the seventeenth and eighteenth centuries,” and this has relationship between the idea of dualism and the structure of society has continued to our present day.

Its modern day political impact on the development of “liberal philosophy” can be seen in the dominant ideology of neoliberalism as the embodiment of nihilism. “Neoliberalism” was coined in 1938 at a meeting in Paris convened by the French philosopher Louis Rougier. At the meeting, participants discussed many aspects of what they saw as the superiority of a market-driven economy over state intervention and, at the end of the meeting, the group agreed on the term “neoliberalism” for this new political philosophy. David Harvey defines it as follows:

Neoliberalism is...a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade....[I]f markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) then they must be created, by state action if necessary.  

111 Plehwe, Walpen and Neunhöffer, *Neoliberal Hegemony: A Global Critique*, p.31
As the Cartesian split had left value on the side of the measurable, this enabled the measurable to define what is valuable. Harvey makes the following comments about the impact that neoliberalism has had on ethical beliefs and values:

In so far as neoliberalism values market exchange as ‘an ethic in itself, capable of acting as a guide to all human action, and substituting for all previously held ethical beliefs’, it emphasizes the significance of contractual relations in the marketplace.\(^{113}\)

This outsourcing of morality to the market has been manifested in the concentration of wealth globally in the hands of multinational corporations and few individuals, and also in global ecological destruction. But why is it so difficult even to articulate an alternative world view? One of the obstacles to the development of an alternative is the credence that is given to the current view of the world by academics, scientists and political leaders. As Mathews notes, when discussing the difficulty of presenting an alternative view in the face of the apparent success and “seductiveness” of the promise of modernity to keep improving our “modern civilisation”:

If we forego modernisation, aren’t we foregoing change itself, resigning ourselves to stagnation — and hence to poverty, disease, hunger, and the rest? No! This is the false dichotomy that proponents of modernisation rely upon. There is another way. It is to find a mode of agency which indeed enables us to change society but in a manner consistent with the continued cohering of our world.\(^{114}\)

Many thinkers have articulated “another way,” based on the demolition of the dualistic foundation, and we are considering in particular for this project the metaphysics of Peirce — who, I argue, has provided a metaphysical system broad, cohesive and rigorous enough to be able to define an alternative view — along with those who have further developed and applied his thought. I will also, as mentioned previously, consider ideology through Peircian semiosis, in order to understand more deeply how it develops and how

\(^{113}\) Ibid., p.3
\(^{114}\) Mathews, "Beyond a Materialist Environmentalism", p.5
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it is sustained, and also how it is subject to change. However, to understand the roots of Peirce’s thought and its radically anti-dualistic nature it is necessary to look further back in history.
Chapter 2: Opposition to Dualism

The Romantic movement strongly opposed this dualistic understanding of nature that we have discussed, and members of this movement presented a coherent vision of a non-dualistic world, with Schelling as a bold proponent of this understanding of nature. In this chapter, Peirce is introduced as building on Schelling’s work and providing a comprehensive metaphysical system that can be used not only to expose the distortions in the current, dominant view of the natural world and our relationship with it, but also to provide the basis for a new relationship between humans and the rest of nature. I examine Peirce’s Categories of Being, his Semiotic and his Synechism, and also consider the social conscience that pervades his work.

Schelling: Romantic Anti-dualist

PEIRCE’S WORK DRAWS ON the ideas of many earlier thinkers, but the heritage of his anti-dualism can be seen most clearly in the ideas of Schelling. And for the context of Schelling’s thought, this project considers the European Romantic movement of the 18th and 19th Centuries, which attacked dualism at its roots, and through science, art and philosophy articulated the fundamental interconnectedness of all of the natural world. The Romantic movement, according to Mathews:

"Prefigured the current ecological view of nature in its general organicism,…[i]ts emphasis…on relationality and the interconnectedness of all things, on holistic forms of organization and explanation in both biology and physics, and on dynamism at every level of such organization." 115

115 Mathews, For Love of Matter: A Contemporary Panpsychism, p.172
The Romantics sought to restore the recognition of agency and subjectivity to the natural world, and to celebrate nature’s creativity. They included

…philosophers in Germany, such as Schlegel, Schleiermacher, Schelling, and to some extent Hegel, and poets in England, such as Coleridge, Shelley, and Wordsworth, [who all] rejected Cartesian dualism and the mechanistic view of matter to which it led, and made it their business to restore mind to matter. […] Schelling…achieved the quintessential expression of the Romantic view of the natural world, [where] nature is a manifestation of a creative power that is in a continuous process of evolution toward higher and higher forms of consciousness.116

Schelling attempted to reveal the depth and complexity of the relationship between humanity and the rest of nature, and he was at the centre of this movement. He also built on the work of earlier thinkers. But what was Schelling’s view on the pervasiveness of dualistic thinking? Gare notes:

Schelling saw the dualism in Kant’s philosophy as an echo of the deeper and more problematic dualism introduced into philosophy by Descartes. Not only did he see the conception of the subject struggling to know the world as a further development of Descartes’ cogito, but saw the source of this conception of the subject and the problematic status of knowledge in a physical world as due to the mechanistic view of physical existence.

While nature was conceived in a way that made it amenable to mathematical analysis, this rendered life, consciousness and freedom unintelligible. To address this problem he concluded that it is necessary not merely to circumscribe the validity of the Newtonian conception of physical existence as Kant had done, but to challenge and replace it (italics added).117

This “replacement” was a restoration of subjectivity to nature, a recognition of agency as part of the natural world, and an acknowledgement of freedom as a creative and productive force in all of nature. As Schelling stated, when considering the idea of freedom as an essential consideration for philosophy:

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116 Ibid., p.172
117 Gare, "From Kant to Schelling and Process Metaphysics: On the Way to Ecological Civilization", p.46
[It is expressed, not merely] by a theoretical but a practical capacity; not by a cognizing, but through a productive, realising power; not through knowledge but through action. (AA I, 3, 73)

When nature is in action, as *Natura naturans* (literally, nature naturing), Schelling says that it “appears objectively as internal becoming, and subjectively as infinite productivity.”\(^{118}\) Thus, instead of the agentic, “free” subject being separate from the object which exists in the natural world, as in Descartes’ view, Schelling simply explains them as different views of the same process. In addition, Schelling considers that some degree of sensibility, that is the ability to feel and respond to aesthetic cues — which could also be described in Keane’s terms, cited previously, as “acts of signification”\(^{119}\) — is implied in every movement, and therefore in some way this sensibility exists throughout the whole universe. Even the ability to ask ourselves questions, to “speculate” is evidence that we are agentic, creative beings.\(^{120}\) In addition, Schelling’s view of rationality does not reduce it to a mechanical process, as he argues that

…what we call ‘reason’ is a mere play of higher and necessarily unknown natural forces. […] There is nothing impossible in the thought that the same activity by which Nature reproduces itself anew in each successive phase, is reproductive in thought through the medium of the organism.\(^{121}\)

Peterson asserts that Schelling considers reason to have “developed” from nature, and that nature is in a perpetual state of “becoming,” while being is “becoming suspended.”\(^{122}\) As we shall see later, this seems to be echoed in Peirce’s contention that “matter is effete mind” in which “habits” have become ingrained (CP 6.25).

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119 Keane, “Semiotics and the Social Analysis of Material Things”, p.419
120 Schelling, *First Outline of a System of the Philosophy of Nature*, p.xvii
121 W I, 3, 320n
122 Ibid., pp. xxix
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Schelling’s anti-dualism, as well as his opposition to a mechanistic view of nature, and his recognition of creativity throughout the natural world, is easily discerned in his analogy of the product of nature as a whirlpool, as he writes:

A stream flows in a straight line forward as long as it encounters no resistance. Where there is resistance — a whirlpool forms. Every original product of Nature is such a vortex, every organized being. e.g., the whirlpool is not something immobilized, it is rather something constantly transforming — but reproduced anew at each moment. Thus no product in Nature is fixed, but it is reproduced at each instant through the force of Nature entire. (We do not really see the subsistence of Nature’s products, just their continually being-reproduced.) Nature as a whole co-operates in every product. (AA I,7 83n)

This idea that “nature as a whole co-operates in every product” certainly resists any reductionist, mechanistic, or dualistic conceptions of nature. And Schelling also speaks of the continual tension between individuality and homogeneity, with individuality being a result of striving against the tendency of nature to return to “a state of indifference,” but that the continuity of organic function, the processes of the natural world, result in its existence as a single, unified organism (AA I,7 xxx). The implications of this for the issues I have identified are clear, as this is rigorously anti-deterministic and eschews mechanism as a way to understand nature. But how does Peirce acknowledge and expand Schelling’s thought, in particular this radical anti-dualism?

Peirce as Schellingian

Over his lifetime, Peirce was able to develop a complete metaphysical system that both reinforced and further developed the ideas of Schelling in particular and the Romantic movement in general. Peirce wrote in a letter to William James that:
My views were probably influenced by Schelling…by all stages of Schelling, but especially by the *Philosophie der Natur*. I consider Schelling enormous… If you were to call my philosophy Schellingianism transformed in the light of modern physics, I should not take it hard.\(^\text{123}\)

Peirce also described himself as “a Schellingian of some stripe” (CP 6.605), and he follows Schelling in many areas, but particularly in the rejection of Cartesian dualism.

I will be discussing Peirce’s thought in more detail later, but we can now consider briefly Schelling’s overall influence on Peirce’s ideas. There are three aspects of Peirce’s metaphysics in particular that we will consider as part of this project: his Categories of Being, the concept of Synechism and his Semiotic. The Categories and Synechism, in particular, carry traces of Schelling’s ideas. And I will also consider Peirce’s pragmatism as being deeply influenced by Schelling.

With respect to the heritage of Schelling’s thought in Peirce’s Categories, Schelling attempts to define the least number of categories necessary to be able to provide an objective account of the world that is united with our experience of it, defining these as objective categories that are also conditions of our subjective experience of nature.\(^\text{124}\)

Schelling proposed his own system of classification of living things based around the triadic division of powers of Reproductive Force, Irritability and Sensibility.\(^\text{125}\) And these classifications have similar characteristics to Peirce’s categories, which I will discuss in more detail later, with the Reproductive Force having elements of undifferentiated possibility (Firstness in Peircian terms), Irritability being based on response to stimuli (a reactive

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\(^{\text{124}}\) Schelling, *First Outline of a System of the Philosophy of Nature*, p.xxvii

\(^{\text{125}}\) Ibid., pp. xxx
category, as Peircian Secondness), and Sensibility being, according to Peterson, “a synthesis of the two,” as it is the source of life’s reactions to the world (similar to Peirce’s Thirdness and “habit taking”). But just as Peirce did not define his categories as mutually exclusive, but semiotically structured so that, for example, Firstness in one context could be Thirdness in another, Schelling’s “powers” are dialectically related to one another, and they all emerge from the underlying power of Nature, therefore the second and third powers always exist within the manifestations of the first.

Peirce’s Synechism, which he described as follows, may be seen to be building on Schelling’s ideas, such as his idea of the world as a single organism, which I have discussed earlier:

The word synechism is the English form of the Greek (synechismos), from (synechés), continuous. […] [M]aterialism is the doctrine that matter is everything, idealism the doctrine that ideas are everything, dualism the philosophy which splits everything in two. In like manner, I have proposed to make synechism mean the tendency to regard everything as continuous. (EP 2.1)

In a similar vein, Schelling asserts that “[t]he universal principle of life individualises itself in every individual living being (as if in a unique world) according to the different degree of its receptivity.”126 In Peircian terms this is a synechistic (and therefore anti-dualistic) view of the natural world, as Schelling uses this classification for all organic beings, with only the extent of the powers varying between organisms of differing kinds. Like Schelling, Peirce was not only radically anti-dualistic but he was also rigorously anti-mechanistic, as he criticised “the palpable falsity of that mechanical philosophy of the universe which dominates the modern world,” instead drawing attention to sensibility, creativity and agency throughout the natural world, noting that:

126 Ibid., p.xxii
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It is sufficient to go out into the air and open one's eyes to see that the world is not governed altogether by mechanism… When we gaze upon the multifariousness of nature we are looking straight into the face of a living spontaneity. (CP 6.553)

However, although Schelling was a major figure in the Romantic movement, in common with many others in the movement, he was by no means anti-science. Gare notes that “the Schellingian tradition is committed to doing full justice to both mathematical physics and free human agency while overcoming Cartesian dualism.”

Let us now consider how the ideas of both Schelling and Peirce are oriented to action and how they provide guidance for bringing about change.

Schelling, Peirce, and Love in Practice

Transformative change that could result in the establishment of an ecological civilisation would need to be based on a broad theoretical foundation. And further underscoring the value of Schelling’s ideas to this discussion, and their influence on Peirce is, just as with Peirce, the breadth of his body of work, and its potential for pragmatic application, as highlighted by Gare’s assertion that

…if Schelling’s work in natural philosophy and science can be successfully defended, this also justifies other aspects of his philosophy, including his reconception of both philosophy and science, his defense of art and history, his notion of dialectical rationality, his ideas on education, and most importantly, his quest for a philosophy that would overcome the nihilism that [was claimed to be] the inevitable outcome of rational thought.

For example, Schelling argued against the primacy of self-interest, upon which our current neoliberal ideology and its associated economic and political systems are based. Joseph Lawrence notes:

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127 Gare, “The Semiotics of Global Warming: Combating Semiotic Corruption”, p.4
128 Gare, "From Kant to Schelling and Process Metaphysics: On the Way to Ecological Civilization", p.54
Instead of relenting to the deification of the market, which “leaves us with nothing to live for beyond personal desire,” [we should recognise] Schelling’s demand that we transform ourselves “beyond the confines of self-interest [to] the possibility of a future in which what is right takes the place of what is right ‘for me’ [and w]ithout such transformation, the market will continue to reign with dire consequences for humanity and the planet. 129

My argument that this is one of the major factors behind ecosystem destruction and provides a great obstacle to the establishment of an ecological civilisation is supported by Matthew Segall’s assertion that

…many of Schelling’s recent commentators agree that the ecological emergency is directly related to the failure of modernity’s Kantian, positivistic understanding of nature and the ‘economic-teleological’ exploitation of earth that it supports. 130

Note Segall’s insightful phrase above, the “economic-teleological principle: exploitation of earth purely for monetary profit,”131 which nicely describes the exploitative rationality to which dualistic perspectives have led. Peterson also stated that a philosophy of nature, in the Schellingian mould, would be likely to “[meet] opposition in part because [of] its ethical and political [implications],” a clear indication that this view would clash with current ideologies, and be strongly resisted by those who have vested interests in the status quo. And with reference to Schelling’s insights into the nature of human freedom, Slavoj Žižek notes that this enables us

…to grasp how the possibility of an ecological crisis is opened up by man’s split nature — by the fact that man is simultaneously a living organism (and, as such, part of nature) and a spiritual entity (and, as such, elevated above nature) [and this has led to a domination of nature] which no longer serves the end of survival but turns into an end-in-itself.132

131 Ibid., p.20
But, just as I have mentioned with regard to Schelling, one of the characteristics of Peirce’s thought which makes it so fitting for this project is his pragmatism. Peirce’s pragmatism — or as he later termed it in order to differentiate it from other forms of pragmatism that he saw as overly instrumental, “pragmaticism” (CP 5.414) — does not define truth by means of its practical application, but by its accuracy, as demonstrated by the manifestation of its reason and logic in operation. As Cornelis De Waal notes, Peirce’s pragmatism is a method, not a doctrine, and Kelley Wells explains it thus:

By pragmatic value Peirce means the evaluation of the concepts as potential “materials for a philosophical theory and of the nature and strength of each.” In effect, the pragmatic maxim acts like a building engineer or architect, testing and thereby identifying the best and most useful materials from which to build the philosophical house.

And thus Peirce’s thought, strengthened by its foundation in Schelling’s ideas, is well suited to a project that examines foundational change that can support the process of transforming civilisation.

Donald Bishop beautifully summarises the potential application of some of the perspectives which Peirce brings to his metaphysical system which echo the ideas of Schelling that I have discussed, perspectives which support the assertions of this project. Peirce, building on ideas from Schelling, applies his work on science, logic and mathematics to provide insight into human relationships and has much insight to offer with respect to political and social issues. For example, just as Schelling, as noted by Lawrence, argued that we need to transform ourselves “beyond the confines of self-interest,” instead of values based on the objective, empirical side of dualistic thinking, so Bishop, calling on the importance of experience and emotion, claims that “central to Peirce's ethics is his...

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philosophy of love”\textsuperscript{135} and illustrates this by Peirce’s definition of love as “the ardent impulse to fulfill another’s highest impulse” (CP 6.289). This definition illustrates the profoundly social dimension to Peirce’s conception of morality, as he also states that, “The only ethically sound motive is the most general one” (CP 8.141).

This also shaped Peirce’s attitude towards what was then seen as Social Darwinism (and which could arguably be seen today expressed as neoliberalism) which he termed a “greed-philosophy” and he expressed his concern that

\[\text{…the conviction of the nineteenth century is that progress takes place by virtue of every individual’s striving for himself with all his might and trampling his neighbor under foot whenever he gets a chance to do so. (CP 6.294)}\]

Tarr notes that Peirce’s social thought involved “trenchant criticism [of] social, economic, and educational institutions” which certainly “did not fall within the mainstream of the social views of his time,” which were capitalistic, individualistic and deeply influenced by Social Darwinism.\textsuperscript{136} But as Peirce did not support the idea that Social Darwinism led to societal progress, or the “cultivation” upon which civilisation is based, from where does human progress come, according to Peirce? He argued that “progress comes from every individual merging his individuality in sympathy with his neighbors” (CP 6.294), and “growth comes only from love [and] advance takes place by virtue of a positive sympathy among the created springing from continuity of mind” (CP 6.304). And instead of a mechanistic universe, shaped only by impersonal physical forces, Peirce saw love as having a transformative power, as he wrote, "Love recognizing germs of loveliness in the hateful, gradually warms it into life, and makes it lovely” (CP 6.289). He further describes

\textsuperscript{136} Tarr, "Roots and Ramifications: Peirce’s Social Thought", p.239
this in action as “the circular movement of love” which is “one and the same impulse projecting creations into independency and drawing them into harmony” (CP 6.288), which action also takes place in the development of human thought.\footnote{Vincent G Potter, \textit{Charles S. Peirce on Norms & Ideals} (Worcester, MA: University of Massachusetts Press, 1967), p.186} This would not be possible through evolution by pure chance (or, in Peircian terms, Tychastic evolution).

Without setting out any roadmap for change and, indeed, urging caution over extending metaphysics into praxis,\footnote{Richard J Bernstein, “Toward A More Rational Community,” in \textit{Proceedings of the C.S. Peirce Bicentennial International Congress}, ed. Kenneth Laine Ketner, Joseph M Ransdell, Carolyn Eisele, Max H Fisch and Charles S Hardwick (Lubbock, TX: Texas Tech Press, 1981), p.116} Peirce was clear about the human characteristics that he believed could lead to a better society, which I shall discuss later.\footnote{Tarr, “Roots and Ramifications: Peirce’s Social Thought”, p.242} Overall, as a problem that involves humanity’s relationship with the rest of nature, I have argued that we can express this as an epistemological crisis that involves our social relationships. Understanding our place in the world through Peirce’s metaphysics also has the potential to reshape our view of our relationship with the rest of nature, to enable us to review our political and economic processes and institutions, as well as consider the transformations in thinking and society that might be needed to lay the foundations for an ecological foundation. So let us now consider Peirce’s metaphysics as a new way of seeing the world that frees us from the divisiveness and destructive power of dualism.
Chapter 3: Introduction to Peirce’s View of Nature

Peirce’s thought is outlined in this chapter, showing how his phenomenology (or “phaner-oscopcy”) leads to the articulation of his Categories of Being, with his normative sciences evaluating the findings of phenomenology through these Categories. Synechism, or continu-ity, is presented as “the keystone of the arch”, as Peirce termed it, that is the unifying principle that completes our metaphysical understanding. The Categories of Being are discussed in overview form as providing a triadic understanding that supports a holistic view of nature, demonstrating the inadequacy of any dualistically-based understanding as a foundation for an ecological civilisation. Peirce’s semiotic, which concerns the development and communi-cation of meaning and understanding, is argued as encompassing all communicative ac- tivity in nature.

The Possibility of a New Way of Seeing

THE PHILOSOPHY OF PEIRCE provides us with a sound metaphysical basis for an understanding of the natural world and our relationship with the rest of nature. This enables us to overcome the dualistic view of the world that pervades our society and often influences our own thinking. In line with Christopher Hookway I argue that, as well as many specific examples, there are four overall characteristics that can be seen in Peirce’s writings as anti-dualistic or, as Hookway expresses it, “[repudiating] the ‘spirit of Cartes-i-anism’” (CP 5.264). Let us look at some of these at a summary level.

140 Christopher Hookway, Peirce (London: Taylor & Francis, 1999), p.19
First, Peirce’s recognition of the importance of a community of consciousness and a collection of enquirers in contributing to knowledge, rather than in the efforts of an individual. As Peirce points out, Cartesianism “teaches that the ultimate test of certainly is to be found in the individual consciousness.” This I shall discuss later in the context of what Peirce calls “a community of philosophers (italics in original)” (CP 5.265). And, as Peirce writes: “The individualism that denies this synechistic connection among individual persons is a ‘metaphysics of wickedness’” (CP 7.571, EP 2:2).

Second, the multi-linear character of his reasoning and argument, rather than “a single thread of inference.” In Cartesian thought “the multiform argumentation of the middle ages is replaced by a single thread of inference.” Peirce’s metaphysical system is based on reasoning that is interlocked, deeply connected, and built, not from single links in a chain, but from multiple threads woven together into a complete system. For example, the basis for the idea of Synecicism is shown through Peirce’s Semiotic, along with his Categories, as establishing that semiosis pervades the universe. Hence Peirce's statement that “all this universe is perfused with signs if it is not composed exclusively of signs” (CP 5.448).

Third, the foundation of his ideas in that which is essential, such as experience, rather than in a claim of detached “rationality.” Peirce’s Categories of Being are arrived at through his consideration of the phenomena that present themselves to his senses, and the ideas that arise in his thoughts. As Peirce expresses it:

I…undertake to look directly upon the universal phenomenon, that is, upon all that in any way appears, whether as fact or as fiction; to pick out the different kinds of elements which I detect in it, …and to form clear conceptions of those kinds, of which I find that there are only three… (NEM 4:51).
Peirce’s phenomenological approach — although he uses the term phaneroscopy to describe “the collective total of all that is in any way or in any sense present to the mind, quite regardless of whether it corresponds to any real thing or not” (CP 1.284) — enables him to derive the metaphysical system of the three Categories of Being. Peirce then examines phenomena in relation to ends, such as beauty, goodness and truth, and from this he postulates the “normative sciences,” the study of what ought to be.

Finally, Peirce repudiates Cartesian thought through the all-encompassing scope of his work due to the connection that he makes from the phenomenological world to normative sciences through his Categories of Being and his semiotic. As Hookway notes, previous systems of thought “undertook to explain all created things. But there are many facts that Cartesianism not only does not explain but renders absolutely inexplicable.” However, Peirce’s metaphysical statement that “matter is effete mind, inveterate habits becoming physical laws” (CP 6.24) can only be understood in the light of his synechistic concept of mind and his theory of final causation, and final causation can only be properly understood in the light of semiosis. Thus, the laws of nature are discovered by abductive inference, and this in itself reveals the connection between the human mind and the designs of nature, as the mind is able to discover these laws.

As Lucia Santaella notes concerning the scope of Peirce’s work:

For Peirce, a system of philosophy must be able to account for the following distinctive traits of the observable universe: (a) growth and developing complexity; (b) variety; (c) regularity, i.e., laws of nature; (d) consciousness or feeling. (CP 6.613)

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These are all areas that are important for this project. And as Peirce himself says, the purpose of his work is

…to erect a philosophical edifice that shall outlast the vicissitudes of time, [and therefore] my care must be, not so much to set each brick with nicest accuracy, as to lay the foundations deep and massive. (CP 1.1)

But how much knowledge of the natural world can be discovered through Peirce’s thought?

As Peirce states, his metaphysics may “furnish [us] a Weltanshauung, or conception of the universe, as a basis for the special sciences.” (EP 2.146) By “special sciences,” Peirce is referring to “Physical” and “Psychical” sciences, such as chemistry, physics, biology on the one hand, and those such as psychology, anthropology, linguistics on the other. Thus, this “special science” is any area of study that seeks to understand the natural world, including humanity. Peirce’s metaphysics offers us a radically anti-dualistic Weltanshauung.

And a brief review of the development of Peirce’s metaphysics shows its own foundation in experience of the world rather than Descartes’ detached “rationality.”

These normative sciences are aesthetics, ethics (which Peirce later terms practics), and logic (CP 1.573). Or, as Potter summarises it: “One might say that, for Peirce, phenomenology merely observes and catalogs the contents of experience. Normative science evaluates and judges the data thus collected, while metaphysics tries to comprehend their reality.”142 The triad of aesthetics, ethic and logic echoes the work of earlier thinkers. For example, Plato articulated the triad of the true, the beautiful and the good and their normative powers, as distinctive but interrelated Forms, as follows:

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142 Potter, Charles S. Peirce on Norms & Ideals, p.8
[T]he true order of going, or being led by another, to the things of love is to use the beauties of earth as steps along which he mounts upwards for the sake of that other beauty, going from...fair forms to fair actions, and from fair actions to fair notions, until from fair notions he arrives at the notion of absolute beauty, and at last knows what the essence of beauty is.\textsuperscript{143}

The poet John Keats exclaimed that “beauty is truth, truth is beauty,” a statement that could be interpreted as unifying aesthetics and ethics, or aesthetics and reason.\textsuperscript{144} And Goethe’s friend and collaborator Friedrich Schiller articulated his concern over the tendency in the late 18th Century to denigrate the aesthetic experience compared to what he termed “practical life.” He mused:

Art is no doubt an ornament of our life and a charm to the fancy; but has it a more serious side? When compared with the absorbing necessities of human existence, it might seem a luxury, a superfluity, calculated to enfeeble the heart by the assiduous worship of beauty, and thus to be actually prejudicial to the true interest of practical life.\textsuperscript{145}

Similarly, Schelling spoke of “art, religion and philosophy [as] the three spheres of human activity in which the highest spirit manifests itself.”\textsuperscript{146} Art, religion and philosophy can easily be read as aesthetics, ethics and rationality.

In their role as normative sciences, aesthetics, ethic and logic (or reason and rationality), enable the establishment and application of standards by which the world can be understood and engaged with, and how life should be lived. For example, the norms for qualities of feeling are established as “habits” by our reaction to the aesthetic; that which

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is considered as a norm for action is mediated by our understanding of ethics; and procedures, legislation, and other methods of conduct, including the way that these are represented and made concrete in institutions, are driven by our understanding of logic and rationality. With regard to Peirce’s normative sciences, J. E. Smith notes that

…logic is said to be normative because it governs thought and aims at truth; ethics is normative because it analyzes the ends to which thought should be directed; esthetics is normative and fundamental because it considers what it means to be an end or something good in itself” and [Peirce’s] ‘pragmatism’ has genuine power for directing the cosmic order, including man, toward reasonable goals (italics added).147

Finally, Peirce’s semiotic is also a normative science, dealing with meaning and the communication of meaning. Peirce terms the development of a sign vocabulary speculative grammar; the transmission of meaning by signs is speculative rhetoric or methoduteic, and the use of correct and valid reasoning and argumentation he terms critic (CP 1.444).

Together, these aspects of Peirce’s thought will enable us to examine all the major issues that are obstacles to the establishment of an ecological civilisation, and to consider the pathway to change that would enable this, in line with Peirce’s view that metaphysics can contribute to a vision of practical action. As I argue, Peirce’s comprehensive and well established metaphysical foundation can be applied to our current worldview in order to understand its shortcomings and to be able to effect change.

So let us now consider Peirce’s Categories of Being in some detail and how, in contrast to the dominant form of thinking today, it helps us to have a deep understanding of rationality that does not disconnect us from the rest of nature, and that can form a foundation for the development of an ecological civilisation.

147 In Foreword to Potter, Charles S. Peirce on Norms & Ideals, p.viii
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The Categories of Being

Peirce came to his understanding of Categories of Being as a result of an extensive review of Kant's twelve architectonic components for the analysis of knowledge,\textsuperscript{148} in conjunction with his own phaneroscopy, as mentioned above, after what he referred to as “the hardest two years’ mental work that I have ever done in my life” (CP 1.561). Peirce refers to these categories as

…three elementary forms of predication or signification, which as I originally named them (but with bracketed additions now made to render the terms more intelligible) were qualities (of feeling), (dyadic) relations, and (predications of) representations. (CP 1.561)

These categories are “absolutely irreducible one to another yet interdependent, and directly observable in elements of whatever is at any time before the mind in any way”\textsuperscript{149} and are also referred to by Peirce as Firstness, Secondness and Thirdness, corresponding also to possibility, actuality and law, as well as feeling, action and thought, amongst other manifestations. Peirce’s own explanation of the Categories, particularly in his letters to Lady Welby, provides the best introduction to their meaning and importance in his philosophy. With regard to Firstness he writes that

Firstness is the mode of being which consists in its subject's being positively such as it is regardless of aught else. That can only be a possibility… The mode of being a redness, before anything in the universe was yet red, was nevertheless a positive qualitative possibility. And redness in itself, even if it be embodied, is something positive and \textit{sui generis}. That I call Firstness. We naturally attribute Firstness to outward objects, that is we suppose they have capacities in themselves which may or may not be already actualized, which may or may not ever be actualized, although we can know nothing of such possibilities [except] so far as they are actualized. (CP 1.25)

Firstness, as a quality of feeling, a “positive qualitative possibility” corresponds to what Peirce termed the “normative science” of Aesthetics, which I will discuss in more

\textsuperscript{148} de Waal, \textit{On Peirce}, p.8
\textsuperscript{149} Potter, \textit{Charles S. Peirce on Norms & Ideals}, p.11
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detail later. Using the example of the colour red, Peirce clarifies that redness is not subjective, as he states, “the fact that this or that is in relation to vision that which we call being red is not itself relative to sight; it is a real fact” (CP 5.430). As Hookway explains of Firstness, it is

…a continuous undifferentiated quality of feeling…[but not] the psychological state of some person or as standing in dyadic or triadic relations to other qualities.¹⁵⁰

Or as Peirce explains,

The initial condition, before the universe existed, was not a state of pure abstract being. On the contrary it was a state of just nothing at all, not even a state of emptiness, for even emptiness is something. (CP 6.215)

Secondness, the Category of experience and actuality, Peirce describes as follows:

Let us begin with considering actuality, and try to make out just what it consists in. If I ask you what the actuality of an event consists in, you will tell me that it consists in its happening then and there. The specifications then and there involve all its relations to other existents. The actuality of the event seems to lie in its relations to the universe of existents. A court may issue injunctions and judgments against me and I not care a snap of my finger for them. I may think them idle vapor.

But when I feel the sheriff’s hand on my shoulder, I shall begin to have a sense of actuality. Actuality is something brute. There is no reason in it. I instance putting your shoulder against a door and trying to force it open against an unseen, silent, and unknown resistance. We have a two-sided consciousness of effort and resistance, which seems to me to come tolerably near to a pure sense of actuality. On the whole, I think we have here a mode of being of one thing which consists in how a second object is. I call that Secondness. (CP 1.24)

This “actuality,” or our consciousness of ourselves in relation to something else, is part of our experience, but not, as Descartes and others would assert, the fundamental basis of existence. It is merely one manifestation of Being. As Potter illustrates:

¹⁵⁰ Hookway, Peirce, p.272
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The breaking of the night’s silence by a piercing whistle; the shock and surprise in it reveals a two-sided consciousness of an ego and a non-ego. This experience is what the course of life compels one to think.\textsuperscript{151}

Secondness brings a dyadic character into the picture, as in Peirce’s illustration above of the door. If, in our pushing against the door, the thought of pushing is abandoned, then there is no experience. Any perception we have of any object is always in an irreducible relation to ourselves; this is how we discern its existence as something other than us.\textsuperscript{152}

Again, using the beginning of the universe to illustrate this category, Peirce suggests that:

Out of the womb of indeterminacy we must say that there would have come something, by the principle of Firstness, which we may call a flash. Then by the principle of habit there would have been a second flash. Though time would not yet have been, this second flash was in some sense after the first, because resulting from it. Then there would have come other successions ever more and more closely connected, the habits and the tendency to take them ever strengthening themselves, until the events would have been bound together into something like a continuous flow. (CP 1.412)

But in addition to this Secondness is sequence, which leads to the origin of time as well as space, as Peirce continues:

Consequently besides flashes genuinely second to others, so as to come after them, there will be pairs of flashes, or, since time is now supposed to be developed, we had better say pairs of states, which are reciprocally second, each member of the pair to the other. This is the first germ of spatial extension. (CP 1.413)

As Secondness introduces relations into the categories, Thirdness has a character of mediation, “that is, of setting two objects in relation to one another;”\textsuperscript{153} thus Thirdness is always a triadic relation. As Potter explains, “Law, governing events, mediates between pure possibility (Firstness) and pure actuality (Secondness).”\textsuperscript{154} As well as mediation,

\textsuperscript{151} Potter, \textit{Charles S. Peirce on Norms & Ideals}, p.11
\textsuperscript{152} Hookway, \textit{Peirce}, pp.106, 112
\textsuperscript{153} de Waal, \textit{On Peirce}, p.10
\textsuperscript{154} Potter, \textit{Charles S. Peirce on Norms & Ideals}, p.13
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Thirdness incorporates order and law, logic, and thought. Peirce said of thought, in contrast to Descartes’ view of consciousness as something external to nature:

> It is of the third category. Only one must not take a nominalistic view of Thought as if it were something that a man had in his consciousness. Consciousness may mean any one of the three categories. But if it is to mean Thought it is more without us than within. It is we that are in it, rather than it in any of us. (CP 8.256)

Thus, thought joins feeling and reaction in a mediating relationship. Potter suggests:

> In psychological terms, then, we might express the mediating role of Thirdness this way: Thirdness is the category of thought, mediating between the Firstness of feeling and the Secondness of reaction.\(^{155}\)

Combined with the importance of continuity, or synechism, in Peirce’s thought, which I shall consider later, Potter explains the import of Thirdness in Peirce’s ideas:

> Mind is thought, and thought is Thirdness, and Thirdness is ubiquitous. The human mind is only one manifestation of Mind, perhaps the highest because it has the greatest capacity for self-control, but not unique. Here again Peirce is insisting upon the continuity of reality. If mind is anywhere, it is everywhere in one form or another.\(^{156}\)

In support of the value of seeking a metaphysical solution to our “wicked” epistemological problem, I argue that, in Peirce’s case, the metaphysical is not separate from the scientific. As the semiotician Barbieri says of Peirce’s work:

> The point is that there is nothing mysteriously “metaphysical” about Peirce’s notions of what he calls firstness, secondness, and thirdness. Rather, these relations refer, in a radically fundamental sense, to the scientifically examinable (and scientifically necessary) relations of possibility, existence and law.\(^{157}\)

And Peirce’s metaphysics sheds light on and is supported by 20\(^{th}\) and 21\(^{st}\) Century scientific advances. As Barbieri continues:

\(^{155}\) Ibid., p.13  
\(^{156}\) Ibid., p.30  
\(^{157}\) Favareau, “The Evolutionary History of Biosemiotics”, p.30
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That the more recent conceptualizations of chaos and complexity theory have given us a better vocabulary with which to talk about such utterly natural phenomena (e.g. iteration, interaction, emergence, downward causation and — in the case of living organisms — autopoesis) attests to the richness of Peirce’s “logic of relations.”\(^\text{158}\)

But let us now further consider the value of Peirce’s semiotics for this project.

Peircian Semiotics

Just as with the other aspects of Peirce’s thought that I have summarised in this chapter, his semiotic is an integral part of his philosophy, supporting and enhancing his metaphysics. Peirce’s semiotic also assists with a new way of seeing the world and our relationship with it, as it provides a rigorous analysis and understanding of meaning and representation, as well as language and communication.\(^\text{159}\) As I mentioned previously, Peirce’s semiotic is also a normative science, as it deals with meaning and the communication of meaning.

Menno Hulswit asserts that Peirce’s semiotic is a prerequisite for his metaphysics\(^\text{160}\) and Peirce described a hierarchical relationship between Logic — which Peirce said could be conceived as “Semeiotic”\(^\text{161}\) — and Metaphysics, with Semeiotic being at a higher level of abstractions than metaphysics. And, therefore, “metaphysics must draw its principles from semeiotic: it must take as the guide of its every step the theory of logic [semeiotic]” (RLT 116). And this means that metaphysical concepts presuppose semiotic principles.

\(^{158}\) Ibid., p.30
\(^{159}\) Hookway, Peirce, p.118
Mihai Nadin summarises that in Peirce’s philosophy the definition of the sign is the method, and the Categories are the system.\(^{162}\) As Peirce puts it:

A sign, or *representamen*, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the first sign. The sign stands for something, its *object*. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the *ground* of the representamen (emphasis in original). (CP 2.228)

In addition, Peirce defines a sign as that which “mediates between an object and an interpretant; since it is both determined by the object relatively to the interpretant, and determines the interpretant in reference to the object, in such wise as to cause the interpretant to be determined by the object through the mediation of the ‘sign’” (EP 2.410). In line with Peirce’s anti-dualistic conceptions of being, this triadic relationship is not “in any way resolvable into actions between pairs,” (PWP 282) that is, it cannot be reduced to a simple cause and effect relationship, and thus is radically anti-dualistic and supports the concept of creativity throughout the natural world.\(^{163}\)

Thus, the relation between “sign” and “object” is always mediated by the “interpretant” and this relation between sign and interpretant is open, such that it may be mediated by another interpretant. Ricoeur cites G.-G. Granger as explaining that the interpretant forms a “commentary” on the sign and its relationship to the object, and this commentary is mediated by experience:

The interpretant which the sign evokes in the mind could not be the result of a pure and simple deduction which would extract from the sign something already contained therein.

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The interpretant is a commentary, a definition, a gloss on the sign in its relation to the object. The interpretant is itself symbolic expression.

The sign-interpretant association, realised by whatever psychological processes, is rendered possible only by the community, more or less imperfect, of an experience between speaker and hearer. It is always an experience which can never be perfectly reduced to the idea or object of the sign of which, as we said, it is the structure. Whence the indefinite character of Peirce’s series of interpretants.\(^\text{164}\)

It is striking that the very recognition of our current ecological crises can be attributed to semiotic analysis. The “signs” of trouble with the climate have been evident for some time and, as Gare notes, the consolidation and interpretation of those signs in order to conclude that human activities are warming the planet and the discernment of the likely consequences, are a shining example of the success of semiosis as conceived by Peirce. Models are, as I shall discuss in detail later, in Peircian terms iconic signs, and it is through the creation and manipulation of climatic models that these conclusions have been drawn.\(^\text{165}\) And in a very recent example, a report of a new study of climate change by Imperial College, London was headlined, “North Atlantic signalled Ice Age thaw 1,000 years before it happened, reveals new research (italics added).”\(^\text{166}\)

An additional aspect of Peirce’s philosophy that provides a powerful rebuke to dualism is his Synechism, and Peirce suggests that this is what locks his metaphysical system together as a cohesive whole.


\(^{\text{165}}\) Gare, “The Semiotics of Global Warming: Combating Semiotic Corruption”, p.3

The Keystone of the Arch

When Peirce speaks of his “completely developed system, which all hangs together and cannot receive any proper presentation in fragments,” he describes synechism as “the keystone of the arch” (CP 8.255-257). Synechism refers to a broad range of related ideas in Peirce’s philosophy, including the view that continuity of being is a condition for communication (CP 7.572); the view that “all phenomena are of one character,” consisting of a mixture of freedom and constraint that tends in a teleological manner to increase the reasonableness in the universe (CP 7.570); the view that consciousness has a bodily and social dimension, the latter originating outside the individual self (CP 7.575); the fallibilist view that our scientific facts are continually subject to revision (CP 1.162).

Peirce also defines synechism as “a purely scientific philosophy [that] may play a part in the [unification] of religion and Science” (CP 7.578), “that tendency of philosophical thought which insists upon the idea of continuity as of prime importance in philosophy” (CP 6.169). Synechism is anti-dualistic, in that it denies an absolute separation of mind from world. Mind and matter are the two extremes of a single continuum, or “two extremes of a very subtle and complex range of differentiations in the continuous time-arrow that constitutes nature,”¹⁶⁷ as are the organic and the inorganic, the artificial and the natural, culture and nature. Continuum is defined by Peirce as “something whose possibilities of determination no multitude of individuals can exhaust” (CP 6.169-170). Potter explains it as follows:

Synechism requires that reality be looked upon as continuous, or as Leibniz says ‘natura non fait saltus’ [nature does not make jumps]. The only differences in nature, therefore, are those of degree and not of kind.¹⁶⁸

¹⁶⁷ Santaella, “‘Matter As Effete Mind’: Peirce’s Synechistic Ideas on the Semiotic Threshold”, p.59
¹⁶⁸ Potter, Charles S. Peirce on Norms & Ideals, p.83
As Peirce articulates the fundamentally anti-dualistic nature of synechism, and the scope of its applicability:

Philosophy...seeks to explain the universe at large, and to show what there is intelligent and reasonable in it. It is therefore committed to the notion...that the process of nature and the process of thought are alike. (NEM 4:375)

Peirce’s synechism also suggests that we as humans are continuous with one another, and this has implications for our view of human society. As mentioned previously, Peirce says much on this topic, for example: “When we come to study the great principle of continuity...it will appear that individualism and falsity are one and the same” (CP 5.402 n2), and the

...individualism that denies this synechistic connection among individual persons is a 'metaphysics of wickedness... your neighbors are, in a measure, yourself, and in far greater measure than, without deep studies in psychology, you would believe. (CP 7.571, EP 2:2)

This also points to discoveries yet to be made while Peirce was writing. The conception of both mind and matter as a “subtle and complex range of differentiations in the continuous time-arrow that constitutes nature”\textsuperscript{169} seems to anticipate Einstein’s discovery of the interchangeable and — at the most fundamental level — undifferentiated state of matter and energy. The so-called Standard Model of particle physics can be seen as an overarching model of synechism that can now be validated empirically. Relativity tells us that mass is synechistic with energy, tragically validated empirically at Hiroshima and Nagasaki. Experimentation has shown us that principles of local (or discrete) causality do not seem to apply at the subatomic level, and the discovery of an elementary atomic particle

\textsuperscript{169} Santaella, "'Matter As Effete Mind': Peirce's Synechistic Ideas on the Semiotic Threshold", p.59
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which seems to be the Higgs boson provides us with some visibility of a previously invisible realm of synechism — with the 2013 Nobel Prize of Physics being awarded to Higgs and Englert.\textsuperscript{170} Esposito also argues that these discoveries “illuminate and modernize Peirce.”\textsuperscript{171}

Peirce’s synechism is part of another triadic set of metaphysical understandings. Bishop suggests that

\ldots one might summarize Peirce’s views…with his own words or terms — “tychism,” “agapism,” and “synechism.” Tychism he called “absolute chance” or the view that not everything is predetermined. Agapism is the “law of love,” and synechism Peirce defined as the “doctrine that all that exists is continuous” or “the tendency to regard continuity...as an idea of prime importance in philosophy.”\textsuperscript{172}

The concept of synechism shows that Peirce viewed reality primarily as a process, and it demonstrates an understanding of continuity of existence, rather than a dualistic and divisive approach, and it also counteracts the reductionism inherent in the mechanical model of the world. Tychism recognises the element of chance and randomness, and therefore challenges a model of reality that is fully deterministic. Finally, Agapism gives a fundamental place to subjectivity, feeling, emotion and empathy in a universe that has been cast as mechanical, cold, lifeless and callous. As Potter summarises Peirce’s view:

\textit{[T]he universe is not as the mechanistic philosophers would have it. It is not governed solely nor principally by the laws of dynamics. It is governed by reasonableness working itself out in the concrete. It has an intrinsic and immanent finality which cannot be reduced to the interaction of blind forces.}\textsuperscript{173}

\begin{footnotesize}
\begin{enumerate}
\item\textsuperscript{172} Bishop, “Peirce and Eastern Thought”, p.267
\item\textsuperscript{173} Potter, Charles S. Peirce on Norms & Ideals, p.190
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Peirce’s semiotic is about the very structure of thought. And his synechistic ideas, taken to their ultimate consequences, show no separation or division between nature and culture, between the organic and the inorganic, the psychical and the physical, the natural and the artificial, all dualisms that Peirce’s work opposes. In fact, in Peircian semiotics, the universe as a whole is viewed as a sign and a person may also be seen as a sign or even “a series of signs.” As Lane explains:

Peirce defines a sign as, roughly, anything that stands for something to some-one, and his claim that man is a sign seems to mean that a person consists of her own thinking, and since that thinking is in signs, the person herself is a series of signs.

This view, that each person is a continuous flow of thought-signs, also reflects Peirce’s synechism.

As Harrison observes, synechism is also vital for the neutralisation of the dualistic view of humans and nature and it provides a foundation for the consideration of man as part of a community with nature — a topic to which I shall return later in this dissertation. Harrison observes:

Peirce’s theory that a person is a sign is both original and profound. Its originality rests on the claim that the mode of man’s being is that of a genuine sign. Its profundity consists in offering an account of person that avoids the ultimate unintelligibility of the Cartesian view and the incurable schizophrenia of the Kantian self. At the same time, it puts in place the foundation for a view of man as a being involved in the creation of a community with a specific moral character.

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174 Santaella, "'Matter As Effete Mind': Peirce's Synechistic Ideas on the Semiotic Threshold", pp.50, 57, 59  
175 Lane, "Persons, Signs, Animals: A Peircean Account of Personhood", p.1  
176 Harrison, "Peirce on Persons", p.217
This repudiates dualism and at the same time emphasises community, as with the views of Peirce that I have stated previously on individualism. But how can this help to bring about the repair of our relationship with the rest of the natural world?

The idea of a community of nature, of which humans are members along with other inhabitants, helps to restore an experience of unity with the rest of the natural world, as opposed to the detachment from the rest of nature, with humans as masters and exploiters of the natural world, that is experienced through the current dualistic outlook. Dieter Steiner and Markus Nauser note the importance of considering the human, zoological, and even the non-living world as a unity:

In particular, the present ecological crisis can be seen as a situation in which the inner socio-cultural world has attained such a degree of detachment from the outer, more basic biophysical reality that destructive interactions between persons and the natural environment become possible or must even follow.\footnote{Markus Nauser and Dieter Steiner, \textit{Human Ecology: Fragments of Anti-fragmentary Views of the World} (London: Routledge, 2002), p.63}

Our being embodied helps to provide our identity as animals and our individuality. But if we add to that an appreciation of ourselves as semiotic beings, as I shall discuss in more detail later, this can help us to also see what we have in common with others in the biosphere, and therefore build a sense of community. Lane expresses the Peircian perspective as follows:

Persons are embodied, and the only embodiment of which we are aware is the embodiment of a person as an animal. What's more, Cartesian minds are self-enclosed, having no ontological connection with others. On my view, persons in their animal aspect are physically distinct from one another, and in that respect each has a separate identity from the rest. But in their semiotic aspect, persons are not distinct in this way. A person overlaps with others, in that the thought-signs that constitute who she is are shared with others.\footnote{Lane, \textit{"Persons, Signs, Animals: A Peircean Account of Personhood"}, p.10}
Thus, Peirce’s synechism dissolves the barriers between individuals, enabling us to understand how we share a common semiotic world with all signifying beings. However, as I have discussed, Peirce referred to synechism as the keystone of his thought. Let us now consider how the Categories of Being help to demolish the erroneous foundational character of dualism impacts which impact all aspects of our relationship with the rest of nature, including our thought processes, making the insane seem rational. In particular, I shall now consider how Peirce’s Weltanshauung is manifested in his understanding of rationality and how this is shaped by ethics and aesthetics, as I discuss the Categories of Being.
Part 2 Reason Renewed by Aesthetics and Ethics

“The madman is not the man who has lost his reason. He is the man who has lost everything except his reason.” — G K Chesterton

Introduction to Categories of Being

I HAVE DISCUSSED THE ecological crisis as an epistemological crisis, where a clearly dysfunction relationship with the rest of nature is the outcome of a view of rationality that obscures its foundation in deeper characteristics of humanity. One of the ways that this crisis is manifested in the society in which we live — a society that clearly privileges rationality and where positivism is the dominant paradigm in all forms of knowledge acquisition and evaluation. Jürgen Habermas, in line with Frankfurt School critical social theory generally, suggests that a process has been taking place in the world that he terms “rationalisation,” which involves the replacement of communal social action with actions regulated solely by rationality, privileging this above all other forms of cognition. As I have argued, this reflects the instrumental, exploitative view of nature that has been incorporated into our culture and society through dualistic and mechanistic conceptions of the natural world. As Thomassen notes, this “instrumental (or purposive) reason” is one of the defining characteristics of modernity, and it changes people’s relationship with each other and with the rest of the natural world and “reduces our relationship to the world to one of a subject trying to dominate an object.”

Part 2 of our dissertation builds on the foundation of Peirce’s metaphysics discussed earlier in order to uncover and examine flaws in the current understanding of rationality. I approach this through the Peircian perspective of Categories of Being, a metaphysical understanding that gives primacy to aesthetics and demonstrates how ethics is based on

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an aesthetic foundation. Peirce’s metaphysics also establishes the link between ethics and rationality, thereby showing how our current model of rationality is based on a severely distorted understanding of the nature of being in the universe.

Therefore, as I discuss each of the Categories in more detail, I note that they do not exist in isolation but, in line with Peirce’s synechism, they can only be understood in relation to the other categories. And as Joseph Esposito notes, with regard to the dualistic notion of the separation of experience and value from the natural world, “[Peirce] was inspired by Schiller’s drive to reconcile sensation and thought, value and fact, within a solitary system.”184 As Gare suggests, Peirce in his development of Schelling’s philosophy recognised that most of the contradictions inherent in modernity are as a result of the prevalence of dualisms and therefore these can be obviated by the recognition of triadic relations,185 enabling us to avoid seeing the world as a collection of dualisms. So, in examining the three Categories of Being, I begin with Aesthetics.

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184 Esposito, “Peirce’s Early Speculations on the Categories”, p.343
185 Gare, "Overcoming the Newtonian Paradigm: The Unfinished Project of Theoretical Biology From a Schellingian Perspective", p.18
Chapter 4: Aesthetics as the Foundation for Ethics

Aesthetics is an aspect of the Peircian Category of Firstness; it encompasses undifferentiated feeling and is manifested as a response to the aesthetic. In this chapter I argue that Firstness as undifferentiated feeling can be understood in relation to what I will describe as wholeness, a quality that I will argue is experienced throughout the natural world, including in human endeavours. And I assert that this forms a common foundation for aesthetics that exists throughout nature. I also point to the importance of Firstness as forming a foundation for an Ethic that can support the establishment of a new approach to reason and rationality.

Firstness

AS I HAVE DISCUSSED, Peirce uses the term phaneroscopy to describe “the collective total of all that is in any way or in any sense present to the mind, quite regardless of whether it corresponds to any real thing or not” (CP1.284), therefore including phenomena of sensation, thought and imagination — what Peirce calls the phaneron — and from this he derives the three Categories of Being. Firstness is the irreducible and unique feature of the phaneron, its potential, or as Peirce describes it,

…[not] the sense of actually experiencing these feelings, whether primarily or in any memory or imagination…[b]ut I mean the qualities themselves which, in themselves, are mere may-bes (sic), not necessarily realized. (CP 1.304)

Brier expands on this explanation of Firstness as potential and notes, through its contrast with a wholly rational/mechanical perspective, that

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…the chaos of Firstness is not seen as the lack of law, as it is in mechanicism and rationalism, but as something full of potential qualities to be manifested individually in Secondness and as general habits and knowledge in dynamic objects and semiosis in Thirdness.¹⁸⁷

Aesthetics is an aspect of the Peircian Category of Firstness. Firstness implies an immediacy of feeling, an undifferentiated, unevaluated, unconditioned phenomenon, and this enables us, in the context of aesthetics, to understand it as the raw experience of beauty based on sensory perception. In another description, Peirce states that this was

…what the world was to Adam on the day he opened his eyes to it, before he had drawn any distinctions, or had become conscious of his own existence — that is first, present, immediate, fresh, new, initiative, original, spontaneous, free, vivid, conscious, and evanescent. (CP 1.357)

The visual arts, music, the tactile experience of sculpture or textiles, the view of a landscape, the perfume of a loved one, or even the sight of an urban vista — all are capable of providing the immediate frisson that indicates that our aesthetic sensibility has been activated. As Peirce wrote, this includes

…certain qualities of feeling, such as the color of magenta, the odor of attar, the sound of a railway whistle, the taste of quinine, the quality of the emotion upon contemplating a fine mathematical demonstration, the quality of feeling of love, etc. (CP 1.304)

However, if Firstness focusses on the immediacy of feeling, how can can judgement as to the “rightness” of the feeling as reflecting an aesthetic assessment be included? I have discussed how Peirce’s Categories form normative sciences, and a judgement, or reaction, in Peircian terms, is a Secondness, so how does this demonstrate that this is more than a personal aesthetic preference? As Potter asks:

Aesthetics as the Foundation for Ethics

How is it possible to get a Secondness from a Firstness?…A distinction is made between the esthetically good and the esthetically bad. Is it merely a matter of taste?\(^{188}\)

The adverb “merely” reflects the widely-held view that what is experienced is somehow of less value in establishing knowledge than that which is objectively, empirically defined — a consequence, as I have argued, of a dualist conception of nature. I will argue that Peirce’s Firstness can be contrasted with the current dominant view of “feeling” as somehow inferior to rational thinking. In this regard, Gare notes the psychiatrist R. D. Laing’s concern over the impact of scientific materialism on the understanding of the importance of aesthetics, as he quotes Laing’s words:

Galileo’s [scientific] program offers us a dead world: Out go sight, sound, taste, touch, and smell, and along with them have gone aesthetic and ethical sensibility, values, quality, soul, consciousness, spirit. Experience as such is cast out of the realm of scientific discourse.\(^{189}\)

And Gare notes that “[Schelling] argued that art is superior to science as a means to comprehend ultimate reality.”\(^{190}\)

From a dualistic viewpoint the aesthetic and ethical, values, qualities, and consciousness all exist in the separate realm of subjectivity. But we can and do make normative judgements based on aesthetic grounds and, according to Bateson, so do all organisms,\(^{191}\) so let us consider the implications of Peirce’s view of aesthetics as shaping ideas of ethics and rationality as they may relate to an ecological civilisation, and consider how aesthetics pervades the natural world, not only from the standpoint of humans.

\(^{188}\) Potter, Charles S. Peirce on Norms & Ideals, p.54
\(^{191}\) Bateson and Bateson, Angels Fear: Towards An Epistemology of the Sacred, p.192
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Wholeness: A Feeling for Life and Home

To better understand the impact of Firstness, as a feeling for the aesthetically good, on ethical and rational aspects of our understanding of the world, we can consider Alexander’s discussion of aesthetics in the (often literally) concrete field of architecture. Alexander develops the theme of life in architecture, and nicely describes a connection between life and aesthetics. In summarising the thrust of Alexander’s work, Gare notes that Alexander “has been concerned with our sense of place in the world and is concerned to recreate the feeling of belonging.”

This speaks to the “feeling” of being home, of dwelling together with family and friends, and it echoes the idea of empathy, as a sharing of feelings with others. This is very pertinent to this project, as an ecological civilisation needs to understand and carefully consider the needs of all its citizens, all of whom share a common planetary home. As Gare further describes Alexander’s assertion:

Alexander argues that [those buildings experienced as] more beautiful are seen as more alive, and that beautiful built-up environments both are the product of and are conducive to the vitality of communities. The feeling for the whole, and the sense of wholeness involved in making the world more beautiful, is a feeling for life.

This “feeling,” which Alexander associates with wholeness, may be seen as a manifestation of Peirce’s firstness, as aesthetics, and Alexander argues that the feeling arises from the integrity of the environment — in this example, a human-constructed environment — as he states:

[The feeling] arises in us, but it originates in the wholeness which is actually there. The process of respecting and extending and creating the whole, and the process of using

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feeling [to make aesthetic judgements], are one and the same. Real feeling, true feeling, is the experience of the whole.  

Alexander also defines this “feeling,” not as emotion, which is the outcome of a cognitive process (and not necessarily a process that comes into conscious awareness) that considers and evaluates an object or situation, but as “unitary,” or “feeling in the singular,” which echoes Peirce’s concept of Firstness. Wholeness, Alexander suggests, is what produces in us the feeling of beauty, and therefore this wholeness is aesthetically good, which becomes an evaluative assessment. And as Alexander concludes:

Once we recognise that feeling and life are somehow one and the same thing, and that the structure we call wholeness is connected with the ground where matter becomes personal, then we begin to see the depth of the revolution in thought to which this idea of wholeness leads. The external phenomenon we call wholeness or life in the world and the internal experience of personal feeling and wholeness within ourselves are connected. They are, at some level, one of the same thing (italics added).

To illustrate, Alexander argues that we have a feeling of life that is activated by buildings that manifest certain aesthetic qualities. This concept of living structure has a much broader application than just architecture, as it provides

…a single way of talking about functioning buildings, ecology, and the beauty of artefacts in a single language, one which shows us the profound meaning and consequence of all these related facets of the world, and one which, above all, gives us an ethical view of things, because the life, really goodness, of any portion of the world is, in this view, then an objective matter which arises from this structure (italics added).

And he asserts that this feeling enables us to better understand our relationship with the rest of the natural world:

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195 Ibid., p.371
197 Ibid., p.314
[It] is the living structure of buildings which awakens a connection with this personal feeling [and] it is not only necessary to understand it when we wish to make living structures in buildings. It is also necessary if we wish to grasp…our relationship with nature.  

In agreement with other anti-dualistic thinkers that we have considered, Alexander notes the limitations of the current, mechanistic world view, which causes a division between the way we measure, analyse, explain and apply our knowledge of the material world, and our own lived experience. Gare observes, for example, that “Alexander analyzes how the mechanistic world view affects our practices.” He uses the example of kindness to illustrate this:

To look at kindness mechanistically is to look at it as a means of getting something. True kindness, however, is not directed toward a goal but rather is a process guided by the minute-to-minute necessity of caring for the feelings and well-being of another.

Relating this to Alexander’s work on architecture, Gare notes, “In the past, building was undertaken with a similar caring response to the unfolding structure of the building and beauty and life were the results.” And, as mentioned earlier, Alexander himself argues that:

Whether or not we are subscribing to this [mechanistic-rational] world picture, whether or not we are aware of the impact of its residue on us…., most of us are still…in the grip of…this mechanical world-picture. Like an infection it has entered us, it affects our actions, it affects our morals, it affects our sense of beauty (italics added).

Our understanding and appreciation of this quality, and our ability to implement the feeling in our constructions, has been hampered by the same dualistic view that separates

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200 Gare, “Architecture and the Global Ecological Crisis: From Heidegger to Christopher Alexander”, pp.2, 6, 7
us from nature. Alexander comments that “freedom of the kind necessary to create profound wholeness is hampered by our institutional norms and by the normal processes of our society.” He also relates this to the influence that our current view of rationality has on all fields of living, as he notes that

…our own society, too, our own democracy, though originating in the ideal of freedom, has nevertheless created an system of thought and action, in the sphere of architecture, which makes living structure all but unattainable. We must now find ways of turning society beyond its too-regimented paths of design and planning in construction which allow the life of every whole in the life of every part to merge freely from the processes by which we make this world.202

Alexander says that “proper understanding of the connection between objective life in a thing and [our] own deep-seated happiness is fundamental and goes to the very nature of order itself.”203 He describes the currently constricted place of aesthetics in architecture, based on a reductive, mechanistic view of the world, as follows: “We have been brainwashed into assuming that the essence of the building lives in its so-called primary characteristics, its shape, volume, line, and spatial organisation.”204 What is missing is a recognition of, as Alexander puts it, “feeling as a way of grasping the wholeness of a situation. [A visceral] feeling of the whole which puts us in touch with the whole.”205 This connection between the internal feeling and the external world is made possible, according to Alexander, because of the interlocking centres in both natural life and constructed artefacts that provide the feeling of wholeness. These “centres,” which Alexander describes

as “building blocks of wholeness,” are not to be considered as components in a reductive view of aesthetics, but rather a conceptual view of how wholeness is produced.

As an example, Alexander discusses the case of a building and its environment, and he suggests that

...intuitively, we may guess that the beauty of a building, its life, and its capacity to support life all come from the fact that it is working as a whole. [This] means that we see it as part of an extended and undivided continuum. It is not an isolated fragment in itself, but part of the world which includes the gardens, walls, trees, streets beyond its boundaries, and other buildings beyond those.

Further emphasising this holistic understanding, and pointing to the almost recursive nature of the centres of wholeness, Alexander continues with the description of this “living” building:

[It] contains many wholes within it — also unbounded and continuous in their connections. Above all, the whole is unbroken and undivided. [And] the wholeness is made of the parts; the parts are created by the wholeness.

In the case of a living structure, Alexander notes that we experience it as a centre, and that experience is what defines it and separates it from other centres, and from the whole. A centre exists in space and has a position in space, even if, as Alexander says, it is a “social or cultural centre, it is still ultimately spatial as well.” Using another example, he notes that “a human head, or ear, or finger is a discernible whole. It is, both visually and functionally, a centre. We experience it as a centre. And it is, in the end, its centredness, which is its most clear, defining mark.”

207 Ibid., p.84
208 Ibid., p.84
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In Alexander’s discussion of centres, the concept enables us to grasp entities in isolation, but recognising that their boundaries are, as Alexander puts it, “fuzzy,” and that their relationship with other entities is what makes them what they are: “focal points in a larger unbroken whole,” the whole being a real structure that exists, it is “what we intuitively perceive as the gestalt,…the broad nature of a thing.” Alexander claims that this is “the source of the coherence that exists in any part of the world (italics added).” He points to it as “a fundamental structure,” which has “a global character,” “an underlying substrate of all life,” and is even a “fundamental part of physics.” This echoes Peirce’s observation that “What we call a Thing is a cluster or habit of reactions, or, to use a more familiar phrase, is a center of forces” (CP 4.157).

Echoing this insight of Peirce, Alexander uses the example of the quantum state of a particle being influenced by the observer as an illustration of the nested and recursive nature of wholeness and its pervasiveness throughout the universe. Thus, experience is just as much a foundation of reality as are particles of matter. Alfred North Whitehead concurs with this view, saying that

Beauty is the internal conformation of the various items of experience with each other…[It] thus concerns the inter-relations of the various components of Reality, and also the inter-relations of the various components of Appearance, and also the relations of Appearance to Reality. Thus any part of experience can be beautiful.

Mae-Wan Ho agrees that this wholeness is a fundamental characteristic of life, and can also be seen in other human artefacts, systems, and even organisations, as she explains (in the context of sustainable economic systems) the concept of wholeness in words that resonate with Alexander’s:

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209 Ibid., p.90
210 Ibid., p.108
Nothing is in control, and yet everything is in control. An organic whole is an entangled whole, where part and whole, global and local are so thoroughly implicated as to be indistinguishable, and where each part is as much in control as it is sensitive and responsive.\textsuperscript{212}

I argue here that, for example, an economic system has the potential to be beautiful, just as our current instrumental, divisive and exploitative economic system is not. Gare suggests that this is “the radical nature of the organic whole (as opposed to the mechanical whole)” with “all parts of the system being informed, participating, and \textit{acting appropriately in order to maintain the whole} (italics added).”\textsuperscript{213} Those who see our current neoliberal-aligned economic systems as beautiful, are surely taking a dualistic, reductionist view, neglecting to include in the “whole” the rest of the natural world, an attitude, it would seem, that has been cultivated by our current dominant ideology. But “economics” shares the root \textit{eco-} (home) with ecology, so an economic system should be able to be experienced as warm, sheltering and inclusive — words that could be used to describe a home that is beautiful, not necessarily in appearance, but as experienced.

It seems that this idea of “wholeness” as aesthetically pleasing could be applied across a range of situations and entities, even institutions and policies, to enable a more harmonious understanding of the aesthetically “good,” but is there a possibility of a common apprehension of what is good in today’s diverse and multicultural “global village”? Radford suggests a simple but profound answer to this question which, in line with Peirce’s thought, links aesthetic beauty with ethical value:

\begin{quote}
Metaphorically, we can refer to an act that enhances responsive cohesion in the world as a beautiful act. A person who leads a principled and generous life promoting responsive cohesion leads a beautiful life.\textsuperscript{214}
\end{quote}

\textsuperscript{213} Gare, "Process Philosophy and Ecological Ethics", p.25
I will examine the concept of “responsive cohesion” in more detail later in this dissertation but I argue here, in line with Alexander, that this will also impact our understanding of our relationship with the rest of nature. How so?

The Felt Value of Aesthetics

Consider whether this appreciation of beauty in “wholeness” is an instinctive or a learned reaction — a Firstness or a Thirdness. In fact, it seems to be both. Alexander describes how one who starts to see the importance of centres in the world gains a greater understanding and a greater aesthetic appreciation for a holistic view of the world. The experience is described as follows:

When I look at [various things] as centres, then I become so much more cognisant of the relatedness of all things — it is...almost like eating the fruit in the garden of Eden; my eyes suddenly perceive everything in such a different way; I see the world in its relatedness, and *as it really is* (italics added).²¹⁵

In this analogy, the idea of wholeness as seen through the perception of “centres” takes Peirce’s description of Firstness as feeling, as pre-fall innocence, and starts to move it into the realm of ethics, or Secondness, where reaction, evaluation and actuality are manifested. This begins to explain how aesthetically driven feeling is able to influence reasoning about what has value and therefore behaviour towards that end. And this understanding has been lost due to the pervasiveness of dualistic thinking. Dewey notes that

...dualism [has] the inevitable result, logically, of the abandoning of acknowledgment of the primacy and ultimacy of gross experience — primary as it is given in an un-controlled form, ultimate as it is given in a more regulated and significant form — a form made possible by the methods and results of reflective experience.²¹⁶

²¹⁶ Dewey, *Experience and Nature*, p.41
And Dewey also, according to Browne, links aesthetics to the minutiae of living, including their ethical aspects, and even to the cohesiveness of ecology, as he comments: “Our daily lives, communities, ecologies, even our simplest acts, are beautiful on a level with the most treasured works of art. Moral and ethical acts can be aesthetic; art can be moral.”

It is interesting to consider some findings on this matter from neuroscience.

If brain activity correlates with the subjective aesthetic experience, then recent empirical research by Semir Zeki et al. appears to show that a rationally based aesthetic experience is phenomenally identical to a sensory one. A number of mathematicians were asked to study several complex equations, assess their level of understanding of them, and then rate the equations on a scale from “ugly” to “beautiful.” The experimenters interpreted the results they found as follows:

The experience of mathematical beauty, considered by Plato to constitute the highest form of beauty, since it is derived from the intellect alone and is concerned with eternal and immutable truths, is also one of the most abstract emotional experiences.

This is exactly in line with Peirce’s comments about Firstness, mentioned earlier, that certain “qualities of feeling” activate our aesthetic sensibilities, and the examples he gives, such as

…the color of magenta, the odor of attar, the sound of a railway whistle, the taste of quinine, the quality of the emotion upon contemplating a fine mathematical demonstration, the quality of feeling of love, etc. (CP 1.304)

The conclusion of the experimenters from the use of brain imaging was that the same area of the brain is activated by this “rational” beauty as is activated by the immediate

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sensory experience of beauty. This could be seen as empirical evidence of the error of the dualistic consideration of rationality as separate from emotion, and an endorsement of the synecism of Peirce’s metaphysics, just as Brent Sørensen suggests when he notes that: “The aesthetic quality is fundamentally felt as it is cognized, as an expression of the universality, continuity, and order of the universe (italics added).”219 And this “feeling” can carry great power, based in its potential to influence what seems to be purely rational thought, and therefore it can drive and moderate action.

Thus a transformation can take place from an experience, a feeling, often indescribable in rational terms, into an act that articulates the inexpressible. This transformation provides a connection between the unlimited potentiality of Firstness, as it is experienced by all inhabitants of the semiosphere, and the embodied expressions of feeling in all its various manifestations. Elizabeth Grosz identifies the power and potential of these affective experiences, as she states:

Sensations, affects, and intensities, while not readily identifiable, are clearly closely connected with forces, and particularly bodily forces, and their qualitative transformations. [...] What differentiates them from experience, or from any phenomenological framework, is the fact that they link the lived or phenomenological body with cosmological forces, forces of the outside, that the body itself can never experience directly. Affects and intensities attest to the body’s immersion and participation in nature, chaos, materiality.220

Interestingly, although Alva Noë points out that

…aesthetic response is always also and fundamentally a matter of feeling, of responsiveness, rather than a matter of judgment [and t]here is literally no possibility of [explicit deliberative reasoning] to decide whether something is beautiful.221

220 Elizabeth Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth* (Columbus, OH: Columbia University Press, 2008), p.3
Noë does propose that aesthetic response is engaging what Peirce would term the Secondness of reaction, as well as the Thirdness of mediation. He argues:

Aesthetic experience happens only where there is the possibility of substantive disagreement, and so also the need for justification, explanation and persuasion. The work of art is only experienced when it is experienced as making claims on us, claims we need to adjudicate. The pleasure of aesthetic experience…is the pleasure of understanding, of seeing connections, of comfortably knowing one’s way about. It is the pleasure that comes from recognizing the purposiveness (Zweckmässigkeit, as Kant would have it), or integrity (as Dewey put it), or meaning, of the work.222

This is in line with our assertion that there is no dualistic division between feeling and rationality, as here Noë illustrates the importance of the cognitive process in producing a felt response to the aesthetic. But how do we draw a connection between the immediacy of feeling, via cognitive mediation, to action?

The earliest forms of art do not seem to have been associated with passive aesthetic appreciation but with practical action. Collingwood discusses the origins of art in the practice of magic, noting that palaeolithic paintings were not made for aesthetic enjoyment, they were made to be used as symbolic representations of prey for hunting, in order to improve the success of the hunt. They were hidden away from view, not contemplated as works of beauty.223 If art is in some way magic, Collingwood argues, and this magical aspect of art arouses emotions in a different way than if art were merely for amusement, then the emotions aroused by magical acts will be focussed and consolidated into agency for effective action. In fact he goes so far to suggest that

222 Ibid., p.127
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…magical activity is a kind of dynamo supplying the mechanism of practical life with the emotional current that drives it [and a] society which thinks it does not need it is perishing for lack of interest in its own maintenance.  

Thus, art as magic acts as a representation of emotion, ritualised to express its practical value. The aesthetically powerful, although experienced as Firstness, directly relates to the power to form habits, as an expression of Thirdness, vital to the formation of an ecological civilisation. But let us look more directly at how aesthetics has the potential to transform our way of living in the world.

The Transformative Feeling of Beauty

As I am arguing, there is more to aesthetics than feeling. As Potter notes, “esthetics sets up norms concerning qualities of feeling or Firstnesses,” and Peirce’s view of aesthetics is suffused with the idea of action rather than contemplation. Discussing the motives for the acts we perform, Peirce writes:

To say that conduct is deliberate implies that each action, or each important action, is reviewed by the actor and that his judgment is passed upon it, as to whether he wishes his future conduct to be like that or not. His ideal is the kind of conduct which attracts him upon review (italics added). (CP 1.574)

As Potter explains:

While in one sense the phenomena with which esthetics deals are ultimately qualities of feeling (and so esthetics truly relates to Firstness), in another sense esthetics more proximately deals with the formation of habits of feeling (not just an isolated quality) and as such has something of Thirdness or generality about it. Isolated qualities of feeling can be

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224 Ibid., pp.58-68
226 Potter, Charles S. Peirce on Norms & Ideals, p.19
judged good or bad precisely in terms of the habit, which in its turn can be altered, modified or rejected in terms of experience's shock.\textsuperscript{227}

This attraction to a certain conduct becomes an ethical belief through the formation of habit, as Peirce describes it:

\[\text{[The actor's] self-criticism, followed by a more or less conscious resolution that in its turn excites a determination of his habit, will, with the aid of the sequelæ, modify a future action; but it will not generally be a moving cause to action. It is an almost purely passive liking for a way of doing whatever he may be moved to do. (CP 1.574)}\]

Along with “self-criticism” the individual’s feelings are shaped by the views and expressions of others, and this process of arriving at ethical beliefs is understood through aesthetics, \textit{as it becomes what the individual is attracted to by their feelings}, feelings that have been deliberately cultivated, just as civilisation needs to be cultivated. This cultivation is vital for ethical living as, for some, there is an attraction to the cruel, the exploitative, and the divisive — just as some are attracted to our current economic system. Peirce explains this, and notes that the influence pervades all aspects of living ethically:

\[\text{The ideal must be a habit of feeling which has grown up under the influence of a course of self-criticisms and of hetero-criticisms; and the theory of the deliberate formation of such habits of feeling is what ought to be meant by }\textit{esthetics}.\text{ [...] [The] theory is the same, whether it be a question of forming a taste in bonnets or of a preference between electrocution and decapitation, or between supporting one’s family by agriculture or by highway robbery (italics in original). (CP 1.574)}\]

As Firstness is equivalent to feeling, possibility and aesthetics, I will consider this as fundamental to the transformation of society to an ecological civilisation. And Kristie Fleckenstein writes of the difficulty of “change radical enough to rewrite the rules supporting a particular arrangement of culture” and suggests that this is challenging in three ways in particular, as we need to develop a different way of seeing, a different way of

\textsuperscript{227} Ibid., p.20
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speaking, and a different way of living. This triad of what we might describe as perception, communication, and civilisation, echoes the ideas of Peirce’s categories.

I will later discuss how new metaphors and narratives could activate the deep feeling needed to be able to accept the need for transformation and find the ways to accomplish it. The emphasis on formation of taste or preference is what leads Potter to conclude that, “Peirce’s final opinion about aesthetics was that it dealt with the formation of right habits of feeling and not with the qualities of feeling.” Thus, as with all of the Categories of Being, it is manifested as a normative science. But let us consider more about how Peirce suggests that ethical beliefs are arrived at, and what prompts them to change. I can now discuss Peirce’s normative science of Ethics, its relationship with Aesthetics and Rationality, and how this can point us to the formation of the “right habits” that could lead us towards an ecological civilisation.

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229 Potter, Charles S. Peirce on Norms & Ideals, p.127n
Chapter 5: The Beauty of Ethics

Here I explore Peirce’s Secondness, in its manifestation as ethics, to show how ethics can be based on Firstness as aesthetics. In this chapter I argue that, as this is based on feeling as understood through Peircian metaphysics, it allows for an ethical appreciation that is based on empathy with the rest of the natural world. I further consider the concept of wholeness and include the idea of responsive cohesion as a way of understanding a connection between aesthetics and ethics. I also begin to examine an inclusive view of ethics as incorporating all of nature, rather than the currently exclusive view that grants ethical status only to humans.

Secondness

PEIRCE’S NORMATIVE SCIENCE OF Ethics is the second of Peirce’s three Categories; it is Peirce’s “science of ends,” according to Potter. As Peirce puts it, “Ethics asks to what end all effort shall be directed” (CP 2.199) and “Action is second” (CP 1.337). Peirce speaks of the decision we make as to “what…to admire…in itself regardless of what it may lead to and regardless of its bearings upon human conduct” (CP 5.36), and he argues that a dualistic, oppositional understanding of ethics as the basis for moral action is incorrect, and also that the understanding of ethics needs to be based on a carefully formed and rigorously developed epistemology, as it will direct all our actions:

We are too apt to define ethics to ourselves as the science of right and wrong. That cannot be correct, for the reason that right and wrong are ethical conceptions which it is the business of that science to develop and to justify… The fundamental problem of ethics is not, therefore, What is right, but, What am I prepared deliberately to accept as the statement of what I want to do, what am I to aim at, what am I after? To what is the force of

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230 Ibid., pp.68, 75
my will to be directed? …Life can have but one end. It is Ethics which defines that end. (CP 2.198)

This dualistic, oppositional view of “right and wrong” is part of the epistemological crisis that I have discussed, as it indicates a fundamental misunderstanding of knowledge of the world and how it is gained. Harries-Jones agrees when he observes:

[T]he epistemological work attached to aesthetics must examine how mind creates its mapping of the world, and how often the map is mistaken for territory.  

We can even argue that the current scientific paradigm, reflecting a reductive, mechanistic and opportunistic engagement with the natural world, is a moral transgression in itself, a transgression against nature, as Mathews speculates:

[I]f…the world is actually a communicative, conative subject or field of subjectivity — then the entire scientific project of exposing the structure of reality, bringing to light the inner mechanisms of things, may constitute a moral or spiritual affront to the world (italics added).  

Peircean Firstness, as feeling or undifferentiated emotional response, an aesthetic phenomenon, is at the root of all conceptions of morality. This view is also supported by more recent thinkers. As Azim Shariff observes:

One of the chief advances in moral psychology over the past decade has been the recognition of the powerful role that moral intuition, driven by our gut instincts, plays in motivating morally relevant action.  

With respect to the impact of ethical beliefs on conduct, Peirce asserts that

…the morality is a hardening agent. It is astonishing how many abominable scoundrels there are among sincerely moral people. The difficulty is that morality chokes its own stream. (CP 2.198)

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232 Mathews, For Love of Matter: A Contemporary Panpsychism, p.76  
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This “hardening” can easily be seen as a morality which is lacking in feeling, devoid of empathy, as rigidity does not display the beauty of “responsive cohesion,” which I shall discuss in more detail later. Similarly, Franciscus de Waal suggests a set or tendencies and characteristics that are required for morality, and that exist in humans as well as some other species. He divides these into sympathy-related traits and norm-related characteristics, that is, those that stem from our feelings, and those that come from rules or, in Peircian terms, “habits”. But, according to Peirce, normative sciences, including ethics, also stem from Firstness.  

Leading Victorian Romantic John Ruskin contrasts the felt experience of emotion with the dominant reductionist, mechanistic explanation of the world beautifully in his *Prosperina*:

I observe, among the speculations of modern science, several, lately, not uningenious, and highly industrious, on the subject of the relation of colour in flowers, to insects — to selective development, etc., etc. There are such relations, of course. So also, the blush of a girl, when she first perceives the faltering in her lover’s step as he draws near, is related essentially to the existing state of her stomach; and to the state of it through all the years of her previous existence. Nevertheless, neither love, chastity, nor blushing, are merely exponents of digestion.

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235 De Waal identifies Sympathy-Related Traits as Attachment, succorance, and emotional contagion; Learned adjustment to and special treatment of the disabled and injured; Ability to trade places mentally with others: cognitive empathy. And Norm-Related Characteristics he nominates as Internalization of rules and anticipation of punishment; Reciprocity, the concept of giving, trading, and revenge; Moralistic aggression against violators of reciprocity rules; Getting along, including peacemaking and avoidance of conflict; Community concern and maintenance of good relationships; Accommodation of conflicting interests through negotiation.

And Alexander, in his discussion of “feeling” as a fundamental component of beauty, and therefore ethics, which I have mentioned, describes several different characteristics of feeling “in a living process.” One of these is identified as

…feeling as a way of grasping the wholeness of a situation…[A] nearly visceral feeling of the whole which puts us in touch with the whole. A feeling of what to do next — at any given instant in the unfolding of the whole.\textsuperscript{237}

But there is an active component to the ethics of feeling, as Alexander explains,

I am also talking about the importance of the idea that a building or any made object, when it has life, creates — generates — deep feeling in the person who encounters it. This principle that a thing, given life, has the obligation and function in the world to induce deep feeling in people…as we move forward through concrete acts of structure-preserving unfolding to generate a new and vigorous whole…By following feeling, we are able to come close to the process of structure-preserving unfolding that must characterize the living process.\textsuperscript{238}

This also puts obligations on us as humans, as

…we need to be aware that any made thing — building, room, street, or ornament — has the obligation to create experience of deep feeling in us… Every wholeness [is] pointing in some direction, and indicating where it might go. This is the most important aspect of wholeness, and the reason we must try to ‘feel’ the structure when attempting structure-preserving transformations.\textsuperscript{239}

But how can we understand the idea of wholeness in aesthetics and its connection with ethics in all of the natural world, not just the realm of humanity?

\section*{The Beauty and Goodness of “Responsive Cohesion”}

\textsuperscript{238} Ibid., p.373
\textsuperscript{239} Ibid., p.373
I have earlier considered Alexander’s concept of “wholeness” in architecture as a basis for the aesthetically beautiful, based on the idea that this represents a structure that is alive in the sense that it is deeply embedded in the world, and that it provides us with a deeply felt sense of it being a living structure. This “wholeness,” as I have discussed, can also be applied to other human systems, including economic systems, and provides a felt experience of aesthetic beauty that reflects an ethical goodness. This deep connection between feeling and wholeness, which I am arguing is the basis for ethical judgements, supports Peirce’s ideas of the method by which habits are formed, as I have discussed earlier, and it also brings experience back to centre stage in the valuation of action. As McDonald notes:

…the character of the object excites a feeling in the subject that, in turn, is the basis for the judgment of intrinsic value. If this is correct, the relation is much more reciprocal than in egoistic theories, as the object generates feelings as well as being the recipient of judgments of worth. The intrinsic character is involved in the judgment, but mediated by the affective subject.\(^{240}\)

And I argue that these “affective subjects” exist throughout the biotic community. In line with this, McDonald asks rhetorically:

How can value be intrinsic to the nonhuman if based on humans and their private feelings? Isn’t intrinsic value precisely independent of such feelings, based on the character, essence, or nature of what is valued rather than the valuer?\(^{241}\)

Is there evidence of such intrinsic value in nature? I assert that this is the “wholeness” that I have argued for previously. Pete Gunter notes that “environmentalists have insisted that nature exhibits interfusion, wholeness, internal relatedness throughout, and

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\(^{241}\) Ibid., p.281
have appealed to such examples to support their case" and Warwick Fox refers to this characteristic of life as “responsive cohesion.” This, he explains, is a “relational quality” and applicable to both physical and non-physical entities, including semiotic meanings, and it certainly echoes Alexander’s concept of “wholeness.”

In responsive cohesion, “cohesion” refers to the fundamental connectedness of the components and the “responsive” aspect is best explained by contrasting it with what he refers to as fixed cohesion and discohesion. As Radford explains,

Fixed cohesion refers to…unyielding relationships: the mathematical fixed cohesion of a formula, the political fixed cohesion of a dictatorship, the design fixed cohesion of absolute symmetry. Discohesion refers to the lack of any relationships: chaos, randomness, the political discohesion of anarchy. [In contrast,] responsive cohesion is…where cohesion is secured through the response of parts to each other to mutual benefit; ‘response’ comes from the Latin Respondum, ‘answering to.’ Thus, responsive cohesion is not simply a mid-point between fixed cohesion and discohesion.

A mid-point would be a partial decay of a highly ordered system, like a dictatorship falling apart or a temple in ruin, where the fixed cohesion turns towards discohesion with no sense of responsiveness. This [responsive cohesion] applies in both aesthetics and ethics and provides a defensible basis for judgement that does not ‘boil down to subjective taste.’ It goes some way towards answering questions about design and architectural ways of thinking, but does so by positioning such thinking as a part of a way of thinking about all of life — a theory of general ethics — that addresses both animate and inanimate worlds.

So when Potter, discussing Peirce’s Secondness, rhetorically asks, “But just what is the esthetically good? What is the admirable in itself?”, Peirce’s answer echoes Fox’s conception of responsive cohesion as the basis of the aesthetically and therefore ethically good:

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244 Radford, "Responsive Cohesion As the Foundational Value in Architecture", pp.512-513
In the light of the doctrine of the categories I should say that an object, to be estethically 
good, must have a multitude of parts so related to one another as to impart a positive 
simple immediate quality to their totality; and whatever does this is, in so far, estethically 
good, no matter what the particular quality of the total may be. (EP 2.201)

Fox relates his “responsive cohesion” to Aldo Leopold’s words that “a thing is right 
when it tends to preserve the integrity, stability, and beauty of the biotic community. It is 
wrong when it tends otherwise,” and he suggests that it is the “source of the most 
fundamental value there is in the world, the foundational value [which] consists in a basic 
relational quality or form of organisation that can be described as one of responsive co-
hesion.” And, in addition, as it a relational quality, responsive cohesion eschews a mech-


anistic, reductionist approach, as “we cannot reduce something as basic, deep, and abstract 
as a relational quality to anything else…the relational quality of responsive allocation is 
the foundation of value.”

Fox also avoids the trap of dualistic thinking and the restriction of morality to the human sphere by framing his ideas within a “world of consisting of a biophysical realm, a realm of symbolic culture, and the realm of material culture,” and he suggests that a “com-
prehensive approach to ethics would provide a unified framework for directly addressing ethical problems in all three realms.” Fox is not alone in this view. McDonald uses the example of Callicott’s environmental ethics, which is based on Leopold’s view, where

…intrinsic value is based on altruistic moral sentiments and projected onto nonhuman 
bearers. The locus of value is in wholes and species, the biotic community, and includes nonliving elements such as soil, air, and water (italics added).

246 Ibid., p.59
247 Ibid., p.167
248 Ibid., p.12
But this does not mean that all have equal value; it recognises that some species — such as humans — have some special characteristics that set them apart from the other inhabitants of the biotic community. He continues:

Intrinsic value is extended to individuals, but rights are confined to members of human communities, which may include domesticated animals. [This ethical view is a] graduated scale of moral obligations based on degree of intimacy, [which] produces a more nuanced ethic of the relations of humans to animals.  

As Potter explains, what is aesthetically good produces deep feeling, but it need not be a feeling that is experienced as pleasure. What makes it aesthetically good is that, as Peirce states, it “must have a multitude of parts so related to one another as to impart a positive simple immediate quality to their totality” — this is a quality of cohesiveness (EP 2.201). As Potter continues,

If that quality be such as to nauseate us, to scare us, or otherwise disturb us to the point of throwing us out of the mood of esthetic enjoyment…then the object remains none the less aesthetically good, although people in our condition are incapacitated from a calm esthetic contemplation of it.

And, of course, we can see this reaction in non-human animals also.

Bateson relates aesthetics to theories of knowledge and also states that “all organisms, not just art critics and philosophers, rely on aesthetics all the time.” David Rothenberg, in a discussion of beauty in nature, notes that what may be beautiful to us can invoke terror in others in the biosphere: “There’s something about the aesthetic value that can be arbitrary: we see beauty, they see fear. Same with glistening poison dart frogs. It’s art that leads birds and other potential predators to flee in fear.”

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249 McDonald, John Dewey and Environmental Philosophy, p.282
250 Bateson and Bateson, Angels Fear: Towards An Epistemology of the Sacred, p.192
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suggests here that “aesthetic value...can be arbitrary,” we argue here that it is the “whole-
ness” of the aesthetic phenomenon, its context in the life and, as I shall later discuss, the
phenomenal world of the organism, its phaneron, in Peirce’s terms, that reveals its life-
saving value. And Collingwood, in his discussion of art as something that brings uncon-
scious emotions into view, also suggested that these emotions may not always be pleasant
ones, but that these are just as important a guide to the ethically and aesthetically good:

No one enjoys having his unconscious emotions dragged into consciousness and there is
often a strongly painful element in a genuine aesthetic experience and a strong temptation
to reject it — hence the art and the artist may be rejected.\footnote{Collingwood, \textit{The Principles of Art}, p.314}

But how can this “feeling” be applied to move us towards our ecological goal?

Ethics for an Ecological Civilisation

In the context of the development of an ecological civilisation, the connection be-
tween the aesthetic and the ethical is of great importance. To return to the notion of
community that I have discussed previously, we can assert that all ethical positions — and,
in fact the very reason for morality — are founded on membership in community. In his
essay \textit{The Land Ethic}, which discusses the morality of humanity’s use of land, Leopold
agrees with this stance when he asserts that

\begin{quote}
All ethics so far evolved rest upon a single premise: that the individual is a member of a
community of interdependent parts. His instincts prompt him to compete for his place in
that community, but his ethics prompt him also to co-operate (perhaps in order that
there may be a place to compete for).\footnote{Leopold, \textit{A Sand County Almanac: Outdoor Essays & Reflections}}
\end{quote}

First, note that this view includes cooperation and competition in a holistic view of
nature, rather than a sole emphasis on competition, as the community of nature is viewed
by our current dominant ideology, based on a neo-Darwinian understanding of evolution. Second, this “land ethic” incorporates within the community all aspects of the land, which for Leopold includes soils, waters, plant and animals. With regard to this community, Leopold provides a definition of the ethically good, as previously mentioned: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”

A “biotic community” is literally a community of life, and here Leopold associates that which is good with that which preserves and augments all aspects of life. In Leopold’s terms this includes “integrity” or wholeness, and “stability,” which again echoes the idea of “responsive cohesion.” And Yi-Fu Tuan notes the connection between the aesthetic of “grace” and the concept of wholeness, via a connection with the divine. He suggests that “‘graceful,’ [as] a term of aesthetic approbation…carries a hint of something deeper — of being in God’s favor, of being in a state of grace.” And he notes that the words “‘health’, ‘whole’ and ‘wholesomeness’ all have the same root as ‘holy’” — as does “holistic.”

To return to the idea of a “web of life” that I have discussed previously, we can recognise, as McDonald states, the importance and the value of the web of relationships, as “holism instead of individualism” in a “reformed ethic of the environment.” He assesses that the implication of this is that the… worldview of the Cartesian subject, with a mind confronting an alien and strictly mechanical world, is replaced with one in which humans are part of an ecological web. The implications are that a new ethic must be formulated in this light for which the relation of human and nonhuman must be at the forefront.

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254 Ibid.
255 Yi-Fu Tuan, Human Goodness (Madison, WI: Univ of Wisconsin Press, 2008), p.8
256 McDonald, John Dewey and Environmental Philosophy, p.261
And he refers to Leopold’s land ethic, which is based on the value of the biotic community as a whole, and is

…founded upon an ecological model of nature emphasizing the contributing roles played by various species in the economy of nature, [and] abandons the ‘higher/lower’ ontological and axiological schema in favor of a functional system of value. The land ethic...is inclined to establish value distinctions not on the basis of higher and lower orders of being, but on the basis of the importance of organisms, minerals and so on to the biotic community.257

Here we can see, again, the connection of cohesion with that which is aesthetically beautiful and that which is of value to a biotic community — an ethical assessment.

As with Peirce’s ethics, there is a strongly communal aspect to responsive cohesion, as Fox explains his view of morality as “[involving] primarily, and perhaps exclusively, behaviour that affects others” and asserts that “the choices that clearly affect others are moral choices.”258 The “others” here include all those inhabitants of the “biotic community,” which includes the land, ecosystems and their living inhabitants. It is clear to see that there is a “responsive cohesion” among these inhabitants, as the environmental crisis is evidence of a response from the rest of the biosphere to the impacts of human behaviour, as it fights to maintain its integrity against forces which seek to strip out the parts that are most useful to them. Radford points out that responsive cohesion specifically requires us to value context in moral decisions, with “the most important context being the global biophysical ecosystem and the next being the social/cultural context, and the next being the human-constructed (or built) environment itself.”259

257 Ibid., pp.262-264
259 Radford, "Responsive Cohesion As the Foundational Value in Architecture", p.527
In a discussion of how “health” could be defined in humans, Kurt Goldstein refers to the German scholar A. Grothe’s view of health as “defined by the fact ‘that the manifestation of life of an individual fits completely his biological requirements which emerge from the encounter of his physiological “performance potentiality” with his external life situation.’” Interestingly, Grothe describes “fitting” as responsiveness, and disease is defined as “defective responsiveness resulting objectively in impairment of the capacity and duration of performance, and subjectively, in suffering.” The restoration of health is accomplished “if such a relation between preserved and disturbed performances is reached, which makes (in spite of residual defects) ‘responsiveness’ possible anew.”

Part of this responsiveness, according to Fox’s approach, includes engaging in a symbolic dialectic with other members of this community, as he explains:

Moral agents bring multiple first, second, and third person perspectives to bear on any [ethical] problem situation. It follows from these considerations that any form of…ethics that fails to take into account all three perspectives that each moral agent brings to the…ethics problem situation fails to take into account highly salient features of the problem situation that is attempting to address.

Although Fox is considering specifically ethical problems in a human community, in a biotic community containing several species these second and third person perspectives would surely need to include all members of this community, even those without a voice of their own. This would obviously require what Havelock Ellis called “a many-sided sympathy,” and Dewey’s finely tuned “moral imagination.” For those who do not have

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260 Goldstein, The Organism: A Holistic Approach to Biology Derived From Pathological Data in Man, pp.329-331
262 Havelock Ellis, The Dance of Life (Boston, MA: Houghton Mifflin, 1923), p.270
a voice — the non-human members of this biotic community — a concept introduced by feminist theologian Nelle Morton may enable us to understand ways to consider their interests within an overall moral framework.

“Hearing To Speech”

Morton writes, with regard to those who may be “other” to us, with life histories that are far from our own, and therefore difficult to empathise with, that we need to apply what she called “hearing to speech.” She explains that this is “a depth hearing that takes place before the speaking — a hearing that is far more than acute listening. A hearing engaged in by the whole body that evokes speech.” Morton believes this ability is as old as humanity, but that its loss is another casualty of our epistemological crisis, as “it is one of those essential dimensions of the full human experience long programmed out of our culture and our religious tradition.” In moving terms she describes the result finding this depth of empathy:

Hearing of this sort is equivalent to empowerment. We empower one another by hearing the other to speech. We empower the disinherited, the outsider, as we are able to hear them name in their own way their own oppression and suffering. In turn, we are empowered as we can put ourselves in a position to be heard by the disinherited to speaking our own feeling of being caught and trapped. Hearing in this sense can break through political and social structures and image (sic) a new system. A great ear at the heart of the universe — at the heart of our common life — hearing human beings to speech — to our own speech.264

Morton is discussing in particular the value and importance of understanding women who are oppressed, alienated from the mainstream of society, and she is articulat-

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ing the benefits of being able to support them through a healing process — vitally important in the community of humanity. The same concept may be able to be applied to “hearing” those in the rest of the natural world who do not have a human voice at all, and therefore drawing close to them — and therefore trying to heal a damaged relationship.

To paraphrase Morton, we need to recognise and cultivate a great ear at the heart of the universe, hearing all beings in the biotic community to speech. As I have discussed, community connection brings empathy, and therefore a greater opportunity for reconciliation.

In contrast with this, dualism does the reverse, as Dewey writes:

Oppositions of mind and body, soul and matter, spirit and flesh all have their origin, fundamentally, in fear of what life may bring forth. They are marks of contraction and withdrawal.265

In line with our argument that the exploitative view of nature prevents us from building an ecological civilisations, Hugh McDonald, after Tom Regan, suggests that our current view of ethics is impossible to apply ecologically, as it is anthropocentric, and can only result in a “management ethic” which decides how best to balance the use and preservation of the natural world only as it relates to human needs.266 In the context of the establishment of an ecological civilisation, this makes an examination of ethics of primary importance. As we have seen, the current dominant neoliberal ideology puts market and contractual relations ahead of all other types of relationships. As McDonald observes,

The ultimate question for moral decisions is what kind of world we wish to make and live in. A purely economic world would involve a diminishment of value and of kinds of value, subordination of all value to economic value.267

And this is the “rational” world we live in now.

266 McDonald, *John Dewey and Environmental Philosophy*, p.250
267 Ibid., p.384
Peirce’s philosophy, though, provides a particular basis for an ethics of social justice and education as, by restoring feeling to ethics, it provides the basis for changing social policies, reshaping educational institution, and setting objectives for society that really consider the interests of all. As Tarr notes,

Peirce...stated that reason untempered by sentiments or feelings, had permitted, even encouraged, the shabby treatment of the poor, the criminal, and the insane [and he] criticized our institutions of higher learning for failure to encourage students to assume their responsibility as part of the social organism [and] chastised our colleges for promulgating the philosophy of individualism and for teaching students to be concerned primarily with their own economic advantage. Peirce believed that what the colleges should be developing in students is a sense of community.268

And an ethics that would support an ecological civilisation would need to consider also relationships with the rest of nature beyond their economic significance. As McDonald asserts,

The goal of a properly environmental ethics is to argue for the preservation of the environment, including other species apart from their resemblance, utility, benefit, recreational value, or other instrumental value to humans (italics added)269.

But how can the idea of morality, as inclusive and as assigning value and significance to all of the natural world, be influential on what we might term an “ecological rationality”?

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268 Tarr, "Roots and Ramifications: Peirce’s Social Thought ", p.242
269 McDonald, John Dewey and Environmental Philosophy, p.5
Chapter 6: Rationality: The Beautiful and the Good

I outline in this chapter the meaning of Peircian Thirdness in the context of rationality, and argue that the current view of rationality is distorted through the dominant ideology and has become an incomplete and exploitative form. By considering rationality in the context of both beauty (Firstness, aesthetics) and goodness (Secondness, ethics) I discuss how we can recover rationality from its modern, degenerate form. In doing this we are recognising its inherent creativity as an aspect of the natural world and emphasising how it can support a holistic understanding of nature.

Thirdness

RATIONALITY IS EQUIVALENT TO Peirce’s third normative science of Logic and, as stated by Potter, “Logic is said to be normative because it governs thought and aims at truth.” Peirce states that, “in [its] psychological aspect [Logic appears] as thought” (CP 8.256) and as a form of Thirdness it is also manifested as logic, law, order and legislation, and habit, and therefore it is of the greatest importance in the consideration of action, change and the resistance to and cultivation of the conditions for change. Peirce’s view of rationality is far broader than that which is usually considered as logic or reason, and provides a strong base from which to consider both the obstacles to and conditions for an ecological civilisation. As James Bradley comments:

[Peirce’s] work has the empiricist intent of rescuing rationality from the absolute necessities of Mind or pure Reason, …and the rationalist intent of restoring intelligible order to those structures of experience which both rationalists and empiricists alike have often

270 Potter, Charles S. Peirce on Norms & Ideals, p.vii
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...consigned to the realm of the non-rational, typically under the rubrics of ‘ineffability,’ ‘feeling,’ or ‘action.’

So Peirce “rescues” rationality in order to encompass experience in its understanding and application.

Rationality has been defined as “a feature of cognitive agents that they exhibit when they adopt beliefs on the basis of appropriate reasons.” In our Western philosophical tradition, this ability is traditionally associated only with humans, as “Aristotle maintained that rationality is the key that distinguishes human beings from other animals,” as well as from other members of the biosphere, as a “stone or a tree is non-rational because it is not capable of carrying out rational assessment” — this view being another manifestation of dualistic thinking. And beliefs that in modernity are classed as “rational” can be “contrasted with beliefs arrived at through emotion, faith, authority or by an arbitrary choice… A being who is capable of being rational but who regularly violates the principles of rational assessment is irrational.” And this, as I have mentioned before, well describes our entire neoliberal infused civilisation.

Like Aristotle, Peirce recognises the power of rationality in advancing our understanding of nature, but his Categories of Being contextualise rationality and demonstrate its roots in feelings, sentiment and morality. He also spoke strongly against the practice, even more prevalent today, of using utility as a guide to the direction of scientific inquiry and mentioned those who display “the nauseating custom of boasting of the utility of their science” and suggested that a

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273 Ibid., p.744
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…useless inquiry, provided it is a systematic one, is pretty much the same thing as a scientific inquiry. Or at any rate if a scientific inquiry becomes by any mischance useful, that aspect of it has to be kept sedulously out of sight during the investigation. (CP 1.667-668)

And in an ideology shaped by Bacon’s view of nature as something to be dominated, conquered and subdued by science to serve the ends of humanity, Peirce’s assertion does indeed provide a drastically alternative option. But what does the type of rationality that is practiced today demonstrate about the prevailing attitude to knowledge?

Modern Rationality

Our neoliberal economic and political system is based on certain assumptions about rationality, assumptions about the way that individuals see the world and their relationship with the rest of nature. As Billing suggests, in an explanation that enables us to see the sharp contrast between the current view of rationality and that enabled by the consideration of Peirce’s metaphysics:

…neoliberal arguments are based on the assumption that the capitalist economy is a market economy which requires a certain constitutional framework, but consists above all of rationally oriented individuals — producers, consumers or voters, provided with particular knowledge — striving to maximise their individual benefits to the benefit of the whole society. […]

This more or less explicit utilitarian ontology goes often hand in hand with a distinctive methodological individualism [which] implies the assumption that the rational individual — above all the economically rational individual — represents the starting and ending point and only reliable unit of analysis.274

As an illustration of the current attitude to rationality, current psychological research being conducted at Swinburne and LaTrobe Universities explores nature by monitoring

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brain activity in order to improve the effectiveness of the money spent by corporations on advertising, and how they can encourage customers to spend more on their products.

As the universities boast:

The beauty about this is that big companies in the food industry, restaurants and retail...can use these findings to say the right things, to aim at the right kind of people and provide the kind of things the consumer wants.275

This is evidence of the dominance in society of what O. W. Markley calls “economic man,” who he suggests has the following characteristics: Economic man is “rationalistic (able to calculate what was in his own self-interest),” he is mechanistic and individualistic, and finally he is “materialistic (with economic forces acting as primary if not exclusive reward and control mechanisms).”276 As Wright himself argues,

Industrial society is based on a political and organizational commitment to the idea of rationality, but as the planet becomes more committed to rationality, in the Enlightenment sense of science and individualism, it also seems to become more irrational, in the ecological sense of sustainability. Rational society seems to be disrupting itself systematically, and if so, then there is a fundamental problem with our legitimating idea of rationality, because this idea is legitimating ecological disaster in the name of reason.

If our “rational” social order is inherently irrational, then we must either give up on it…or articulate a more coherent idea of rationality, an idea that will legitimize a more ecological and sustainable social order.277

Thus, in our current civilisation, distorted as it has been by dualism, rationality has taken centre stage, supported by the positivistic assertion of David Hume that

If we take in our hand any volume of divinity or school metaphysics, for instance; let us ask Does it contain any abstract reasoning concerning quantity or number? No. Does it

contain any experimental reasoning concerning matter of fact and existence? No. Commit it then to the flames; for it can contain nothing but sophistry and illusion.278

In discussing rationality as a key aspect of modernity, Thomassen notes that reason is a “defining part of modernity” and, as I have argued, this means “instrumental (or purposive) reason.” Thomassen’s conclusion is in line with our argument that the impact of this is to

…[reduce] our relationship to the world to one of a subject trying to dominate an object. The same happens when reason is applied in the context of humans and social relations. When (instrumental) reason is applied in this area, humans are treated as objects to be manipulated and dominated. Thus, modernity equals reason, reason equals instrumental reason, and instrumental reason equals manipulation and domination.279

This modern privileging of reason was addressed by T. S. Eliot when describing the “metaphysical poets,” those of the 16th and 17th Centuries, and their predecessors, as those “who incorporated their erudition into their sensibility: their mode of feeling was directly and freshly altered by their reading and thought.” Eliot explains: “In [George] Chapman especially there is a direct sensuous apprehension of thought, or a recreation of thought into feeling, which is exactly what we find in [John] Donne.”280 However, as Eliot observes, after the 17th Century, following the dawn of dualism

…”something…happened to the mind…between the time of Donne or Lord Herbert of Cherbury and the time of [Alfred, Lord] Tennyson and [Robert] Browning; it is the difference between the intellectual poet and the reflective poet. Tennyson and Browning are poets, and they think; but they do not feel their thought as immediately as the odour of a rose. A thought to Donne was an experience; it modified his sensibility (italics added).281

279 Thomassen, Habermas: A Guide for the Perplexed, p.21
281 Ibid.
In a post-enlightenment era, we exist within a type of reason defined by its supremacy over superstition, but also a supremacy of reason over emotion and experience as the embodiment of thought. But Mathews notes, this overemphasis of a simplified version of reason led to some dreadful outcomes:

Enlightenment thought was...committed to the supremacy of reason, where its notion of reason was essentially dualistic, arising out of the Cartesian dichotomy of mind and body. However, this notion of reason also encompassed a wider set of dualistic and hierarchically ranked categories that systematically defined and valorized reason at the expense of other qualities, such as emotion, feeling, intuition, instinct, faith, mysticism, nature, superstition and magic.

This conceptual system['s] [...] one-sided rejection of reason ended up feeding reactionary tendencies across Europe, such as jingoistic nationalism, and, in the worst case, the racist glorification of blood and soil in Nazi Germany.  

The dominant view of rationality is either that it stands alone, detached from any connection with ethics, or that it is used to develop and review ethical standards. This stems from the overarching belief that the primary — and only truly reliable — method of gaining understanding of nature and our place in it is through rational enquiry. But this thesis argue that methods of acquiring and understanding information about the world are themselves morally charged. To illustrate this, we have only to look at the supposed “solutions” that have been applied to the ecological crisis. As I have previously cited, Bruni observes:

The majority of ‘knowledge tools’ that have been incorporated in the mainstream of the cultural-institutional-technological web that is supposed to ‘manage’ the sustainable use of biodiversity and ecosystems world-wide, are amply based on a combination of mechanistic biology, genetic reductionism, economical determinism and neo-Darwinian cultural and biological perspectives.  

283 Bruni, "Biosemiotics and Ecological Monitoring", p.298
And this, therefore, has a major impact on our relationship with the rest of the natural world.

A focus on utility and functionalism, as I have argued, leads to exploitation of the natural world, including the exploitation of humans by other humans.\(^{284}\) Alexander points out that, “We take the step from description to criterion too easily, so that what is at first a useful tool becomes a bigoted preoccupation” and he provides the following example: “England’s nineteenth century low-cost slums were conceived only after monetary values had explicitly been given great importance through the concept ‘economics,’ invented not long before.” And he summarises the impact of this form of thinking on the individual, cut off from Peirce’s “agapastic” way of reasoning that takes into account the needs of others:

Under the influence of concepts, he not only does things from a biased point of view, but sees them biasedly as well. The concepts control his perception of fit and misfit — until in the end he sees nothing but deviations from his conceptual dogmas, and loses not only the urge but even the mental opportunity to frame his problems more appropriately…The self-conscious designer works entirely from the picture in his mind, and this picture is almost always wrong.\(^{285}\)

But how does Peirce’s view of rationality differ from the current, dualistically based, utilitarian conception?

**Peirce’s Rationality**


As I have discussed, Peirce closely ties rationality with aesthetics and ethics, but the usual view of ethics and rationality is as expressed by Bernstein:

> [O]rthodox positivism condemns ‘ethical judgements’ as nonsense, or at best the expression or evincing of non-cognitive emotions and attitudes, [and] the newer approach that has replaced positivism has exposed its hidden and unjustified presupposition, viz., that science, or rather what the positivists mistakenly thought of as science, is the measure of all legitimate meaning.  

However, as Bernstein expresses the shortcomings of this approach, “[O]ne of the nagging and persistent questions has been, How are we to provide an ultimate justification for the rules, principles, and norms that we actually do employ?” This is the question answered by Peirce’s privileging of ethics before rationality, and Peirce’s view of ethics, rationality (and aesthetics) as “normative sciences,” that is, they set standards and define values.

Rationality, according to Peirce, has several characteristics that show how it offers so much more than our current understanding. First, we can note, as mentioned previously, the holistic nature of Peirce’s conception of rational thought. Considering Peirce’s synechism, we can see that his Logic is not more complex, nor of a higher order than either Aesthetics and Ethics, as all are irreducible Categories of Being. As Potter explains the role of the Categories in establishing norms, as well as reason’s roots in aesthetics:

> Esthetics sets up norms concerning qualities of feeling or Firstnesses; ethics or practics sets up norms for judging conduct or Secondnesses; logic sets up norms for deciding what thoughts we should entertain and what arguments we should accept, what procedures we should adopt, that is, norms for Thirdnesses (CP 1.574)...Logic deals with Thirdnesses considered in their dyadic relation to ends (Secondnesses). Reasoning is but a special case of controlled action controlled action dealing with Thirdnesses and not just with Secondnesses and so logic is a special case of practics.

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287 Potter, *Charles S. Peirce on Norms & Ideals*, p.19
As Peirce describes it, “Logic is a study of the means of attaining the end of thought [and] it is Ethics which defines that end” (CP 2.198). And also, “Thinking is a kind of action, and reasoning is a kind of deliberate action; and to call an argument illogical, or a proposition false, is a special kind of moral [or ethical] judgment” (CP 8.191). Very simply, as Bernstein explains,

…all reasoning presupposes norms, and…a comprehensive philosophic system must recognize the primacy of a critique of norms, a critique that examines ultimate ends and purposes. Logic then is a normative discipline, and the discipline from which we evaluate the norms of logic is ethics.  

Peirce put it most succinctly when he stated that, “it is, therefore, impossible to be thoroughly and rationally logical except on an ethical basis” (CP 2.198). Peirce also asserted that, “Logic…is…only another name for semiotic, the quasi-necessary, or formal, doctrine of signs” (CP 2.227), and he provides further explanation:

The term “logic” is unscientifically employed by me in two distinct senses. In its narrower sense, it is the science of the necessary conditions of the attainment of truth. …[I]t is general semiotic,…it coincides with the study of the necessary conditions of the transmission of meaning by signs from mind to mind, and from one state of mind to another. (CP 1.444)

Thus, Peirce’s view of logic includes its role in transmitting meaning, and “state of mind,” which would include conveying emotion to others, a clear indication of its connection with Firstness and, as I shall argue later, of the importance of rhetoric in Peirce’s metaphysical system, and its importance for an ecological civilisation.

Peirce argues that Thirdness, or rationality, that is separated from genuine Firstness and Secondness, aesthetics and ethics, is degenerate, therefore incomplete and actually unreasonable. Peirce uses the same term with reference to religion, as he notes that our

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288 Bernstein, Perspectives on Peirce: Critical Essays on Charles Sanders Peirce, pp.84, 85
connection with “the religious phenomena is sporadic, not incessant,” and he goes on to explain that this

…causes a degeneration in religion from a perception to a trust, from a trust to a belief, and a belief continually becoming more and more abstract. Then…this business gets into the hands of theologians: and the ideas of theologians always appreciably differ from those of the universal church. They swamp religion in fallacious logical disputation.

Thus, the natural tendency is to the continual drawing tighter and tighter of the narrowing bounds of doctrine, with less and less attention to the living essence of religion, until, after some symbolum quodcumque [unspecified creed] has declared that the salvation of each individual absolutely and almost exclusively depends upon his entertaining a correct metaphysics of the godhead, the vital spark of inspiration becomes finally quite extinct. (CP 6.438)

In this example, the disconnection of the doctrine of the church from the spiritual experience of religion causes a degeneracy of practice based on fallacious reasoning, where disputes over logic take precedence over the value of experience. If ethics is based on our experience, as Firstness, so genuine rationality must be based on Firstness and Secondness, where logic is based on possibility as well as actuality. But could a renewed and holistic rationality support the establishment of an ecological civilisation?

The Creativity of Reason

I have argued here that rationality is not just the manipulation of symbols with regard to efficiency alone, but this conception is difficult to shake off, as the world view that we hold is embedded within our social structures and institutions, and we are shaped by it from birth. As Brier notes,

Growing up in a culture, the child’s mind is infected with the memes of culture and its worldviews. They program its mind with unitary ideas and causalities. This explanatory
narrative of reality and meaning is most often performed through religion in the prescientific and its preindustrial societies, but in the modern industrialized cultures, the scientific rationality and worldview is more and more taking over.\textsuperscript{289}

In line with our central argument, an ecological and holistic rationality would involve considering aesthetics and ethics as part of rationality. Interestingly, one of Peirce’s nominations of manifestations of Thirdness, that of rationality as Law, provides a greater understanding of rationality than that currently accepted. As Stuart Kauffman points out:

\begin{quote}
Legal reasoning was held to be the highest form of reasoning in the Medieval period. With the success of Newton, it lost its status to that of scientific reasoning. Legal reasoning covers practical actions. It adjudicates the reasons and motives we have for our acts in concrete situations, and does so by laws codified and interpreted over the years by precedent, legislation, or both. Indeed, if we contemplate an evolved body of law such as English common law, started in 1215 by the Magna Carta, it is a magnificent collective human achievement.\textsuperscript{290}
\end{quote}

Kauffman is recognising the need to enfold the development and application of reason with the process of reasoning itself, and ensuring that motivation and situation are included as part of reasoning. In addition, Peirce points out that most people do not actually use reason to criticise their thoughts, but merely reflect on how these thoughts feel to them; as he observes that

\begin{quote}
…the love of truth is still far from mighty; and a gift for reasoning is still as rare a talent as a gift for music. Most men are incapable of strong control over their minds. Their thoughts are such as instinct, habit, association suggest, mainly. Their criticism of their thoughts is confined to reconsideration and to asking themselves whether their ideas seem reasonable. I do not call this reasoning: I call it instinctive reflexion. (CP 7.606)
\end{quote}

To Peirce, this is not necessarily a failing, as he continues:


For most purposes [instinctive reflexion] is the best way to think; for instinct blunders far less than reason. Reasoners are in danger of falling into sophistry and pedantry. Our instinctive ways of thinking have become adapted to ordinary practical life, just as the rest of our physiology has become adapted to our environment… So much more important is it, on the whole, to feel right than to reason deeply. (CP 7.606)

Instinctive ways of thinking, shaped by our culture and traditions, can act as a guiding repository of cumulative experience. They can thus provide a form of collective consciousness (or conscience) that can be superior to an individual intellect. However, as I have previously argued, ideology — a way of collective thinking informed, influenced and often justified by an appeal to “tradition” — can be dangerously distorting, and I will examine this in more detail later as “semiotic distortion.” So it is interesting to note that Peirce did not put instinct as the ultimate guide, as he had earlier stated,

I would not allow to sentiment or instinct any weight whatsoever in theoretical matters, not the slightest. Right sentiment does not demand any such weight; and right reason would emphatically repudiate the claim if it were made. True, we are driven oftentimes in science to try the suggestions of instinct; but we only try them, we compare them with experience, we hold ourselves ready to throw them overboard at a moment's notice from experience.

If I allow the supremacy of sentiment in human affairs, I do so at the dictation of reason itself; and equally at the dictation of sentiment, in theoretical matters I refuse to allow sentiment any weight whatever. (CP 1.634)

According to Peirce, Reason is being used by Science to advance truth, this enables it to “grind off the arbitrary and the individualistic character of thought” (CP 1.178), or that which might be promoted by the “sentiment or instinct” of the individual, to the detriment of the community as a whole. As Maryann Ayim notes:

The nature of rational inference, as critical, self-conscious, and self-correcting, is conducive to the long-range theoretical goal of developing greater levels of reasonableness.

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through the acquisition of knowledge. Similarly, the instinctive process of decision making, as fast, reliable, and readily available, is conducive to the short-range practical goal of acting quickly in response to a pressing and perhaps urgent state of affairs.292

And as Peirce concludes, showing the importance of a rationality that is shaped by the habits of aesthetic and ethical practice:

Wisdom lies in nicely discriminating the occasions for reasoning and the occasions for going by instinct. […] So much more important is it, on the whole, to feel right than to reason deeply. (CP 1.634)

In particular, the value of “sentiment or instinct” in rationality could be seen in Peirce’s “abductive reasoning,” a form of creativity in reasoning that is used in the formation of hypotheses. In contrast to inductive reasoning or deductive reasoning, which examine the veracity of a hypothesis, abductive reasoning is the process by which a new hypothesis is formed, enabling scientific enquiry to proceed in a novel direction.

Peirce outlined the creativity of reasoning in line with his categories. This process is as follows: With regard to Firstness, new ideas arise spontaneously — ideas that are “new” in that they depart from the habitual mode of reasoning. This is known as tychastic development, or development by chance. But in agapastic development, new ideas are taken up due to a pre-conscious attraction for the idea based on some form of empathy, such as sympathy or affinity, as a form of synechism, which may be individually based but may also be based on a community benefit. Thus, agapastic rationality manifests the qualities of Thirdness, as a mediation between chance and unreasonable force (CP 6.302).

Agapastic refers to the Greek word for friendship or brotherly love, *agape*, and agapism is Peirce’s conception of what he calls “the law of love” (CP 6.302). He explains

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it as the natural tendency of evolution to take into account the interests of the community, or in modern terms the “ecosystem,” and this leads to an increase in “reason” in the universe. But Potter refers to anancastic development of rationality, which manifests the qualities of Secondness, where ideas are adopted whose “character is determined…by internal causes such as logical development.” Descartes’ *cogito* would seem to fit this definition well. In anancastic development, the rationality is classed as “degenerate.” As Peirce expresses it:

> The most degenerate Thirdness is where we conceive a mere Quality of Feeling, or Firstness, to represent itself to itself as Representation. Such, for example, would be Pure Self-Consciousness, which might be roughly described as a mere feeling that has a dark instinct of being a germ of thought. (CP 1.530)

As I have argued, our current way of thinking, privileging rationality above all else, is crippling our ability to respond with fresh vision to the complex crises that we face. It traps us in ways of seeing the world that are producing outcomes that are manifestly irrational, arguably even insane, and it stifles the creativity which is needed for the holistic study of nature. Gare argues that “deductive logic is not creative. It helps us present thoughts already thought out; it does not help us think up thoughts. In fact by presenting old ideas in a forbiddingly formalistic manner, logicians have frequently inhibited the development of new ideas,” and he asserts that this way of reasoning has produced “vast self-enclosed nets to become the whole of reality for the desiccated minds of their creators.” And although there have been some successes, “these successes must be qualified by the limited success of logic in dealing effectively with probabilities, causal relations, psychological attitudes, [etc.].”

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293 Potter, *Charles S. Peirce on Norms & Ideals*, p.180
It is also interesting to note that recent research into brain activity suggests that rational thought actively suppresses the emotional processing that can cause us to take account of the importance of relationships. As a neurological study by Anthony Jack et al. found

…clear evidence of reciprocal suppression: social tasks deactivated regions associated with mechanical reasoning and mechanical tasks deactivated regions associated with social reasoning…[This phenomenon] is neural in origin, …there is a physiological constraint on our ability to simultaneously engage two distinct cognitive modes (italics added).295

Jack concludes:

Empathetic and analytic thinking are, at least to some extent, mutually exclusive in the brain… When the brain fires up the network of neurons that allows us to empathize, it suppresses the network used for analysis.296

And in words that echo Peirce’s criticisms of a reductive and isolated rationality, Jack suggests that the ethical impact of this is profound: “[Y]ou can lose your moral compass if you get stuck in an analytic way of thinking.”

This is an area where we can consider Peirce’s understanding of rationality in its application to the creation of new ideas, new directions for enquiry. Potter again focusses on the active aspect of Peirce’s Thirdness, when he notes that, “because of its generality Thirdness must essentially refer to the future.”297 As Peirce expresses it: “An Abduction is Originary in respect to being the only kind of argument which starts a new idea” (CP

297 Potter, Charles S. Peirce on Norms & Ideals, p.87
It is thus strongly oriented towards the future, although learning from past errors, and is able to shape rational enquiry and conduct:

"An Abduction is a method of forming a general prediction without any positive assurance that it will succeed either in the special case or usually, its justification being that it is the only possible hope of regulating our future conduct rationally, and that Induction from past experience gives us strong encouragement to hope that it will be successful in the future." (CP 2.270)

We have a huge range of knowledge and experience from which to draw, and which can provide input to the process of abduction, and rather than continuing to repeat past mistakes and continue unwaveringly down the same path that has led to our current problems, Brier suggests that this is necessary to integrate knowledge about communication, the construction of meaning and use of language from the ‘hard’ sciences with that from the humanities and social sciences. By incorporating the narrative and emotional aspect of knowledge into our epistemological understanding of information science, engineering, economics and other methods of inquiry, we can regain a more harmonious orientation to the natural world.²⁹⁸ Let us consider how we can do this by examining how we can come to really know our fellow citizens of the natural world, and what impact this will have on us.

²⁹⁸ Søren Brier, "Cybersemiotics: An Evolutionary World View Going Beyond Entropy and Information Into the Question of Meaning", *Entropy (Basel, Switzerland)*, 12, no. 8 (2010): 1902-1920, p.1912
Part 3 Knowing the Citizens of the Semiosphere

“This landscape of shadowed voices, these feathered bodies and antlers and tumbling streams — these breathing shapes are our family, the beings with whom we are engaged, with whom we struggle and suffer and celebrate.” — David Abram\textsuperscript{299}

Introduction to Knowing Our Fellow Citizens

THE EPISTEMOLOGICAL CRISIS I have discussed is a result of the current dominant dualistic view of nature, coupled with a mechanistic and reductionist understanding of our relationship with the rest of the natural world. It is this that is the foundation of the wicked problem that forms the greatest obstacle to a civilisation that is truly ecological. This view has pervaded the study of nature, and has led to a distorted and degenerate form of rationality that pervades human reasoning in political, economic, educational and scientific fields.

I here suggest that a different approach to the acquisition of knowledge of nature — that which was in pre-modern times known as “natural philosophy” and is now seen as “science” (albeit with a greater focus on explanation and prediction, as I have discussed with respect to instrumental reasoning) — is needed to begin to repair our relationship with the rest of the natural world and change it from one of exploitation and ruination to one based on a foundation of knowledge that is based in shared interests and shaped by shared feelings and empathy.

Peirce has clearly shown the basis of rational thought in aesthetics and ethics, and as such, rationality has a foundation in feeling and action, although it is in itself a fundamental Category of Being. However, Bruni refers to the “knowledge tools” that are used “in the mainstream of the cultural-institutional-technological web that is supposed to “manage” the sustainable use of biodiversity and ecosystems world-wide,”\(^{300}\) and the character of these tools and their application to inquiry into nature impacts our understanding more deeply than we might expect from “scientific” knowledge. Here I am proposing an

\(^{300}\) Bruni, “Biosemiotics and Ecological Monitoring”, p.298
Feeling Our Way to an Ecological Civilisation

alternative view of the study of the natural world that may help us to grasp the implications of our place as participative citizens in an ecological civilisation, rather than as exploitative managers of it.

I argue here that this means getting to know our fellow citizens through recognising the other inhabitants of the biosphere as active, creative and communicative participants in the natural world along with us. It also involves understanding semiosis as a common language that we share will all inhabitants of the biosphere. As we explore the value of Peircian semiotics in “finding the stable place of culture in nature” I will later consider how Peircian semiotics has been extended into the idea of the Umwelt, about which Kull says, “[Jacob von] Uexküll’s biological concept of Umwelt has been used in semiotics as a tool to extend the concept of semiosphere to the sphere of non-human organisms,” and also consider biosemiotics, ecosemiotics and cybersemiotics, all as aspects of our understanding the semiosphere.

The Umwelt theory of Uexküll provides us with a semiotic understanding of life that we can share with all living subjects, and I argue that this view of experience will help to reconnect us with the rest of the natural world and enables us to see an ecosystem as a community to which we belong. Interestingly, Monika Bauer et al. found in their research that merely prefixing a questionnaire on personal and social well-being with a request for participants “to confirm their eligibility for the study by checking a box indicating that they were ‘an American consumer’” significantly increased the respondents bias toward values reflecting self-enhancement, including competitiveness and selfishness, compared

with those in the control condition, where the word “consumer” was replaced with “citizen”\textsuperscript{302}.

So let us now consider aspects of citizenship within an ecological civilisation by examining how Peirce’s semiotic can help to bridge the gap that has been created by dualism between humanity and the rest of nature. But first let us consider our epistemological crisis at the level of a very personal relationship.

Chapter 7: Humanising Nature, Naturalising Society

After considering our epistemological crisis as a crisis of relationship, I here introduce the field of Human Ecology as a way to unite the study of human culture and the natural world. I argue for the value of Peircian semiosis and human ecology in providing a way to understand how human culture can coexist harmoniously with the rest of nature, and I discuss how human ecology examined semiotically enables us to see the importance of recognising and understanding the complex and manifold relationships between humans and the rest of the natural world. This focus on relationships in nature helps to improve our approach to epistemological enquiry.

Falling in Love Again: A New Paradigm

WE HAVE ACCUMULATED A great deal of knowledge of ecological processes, we understand why species are becoming extinct, why waste is accumulating, why the earth’s climate is changing. In addition to this, most universities teach courses on variations of “sustainability,” the idea of which — if not always the practice — is now being built into the key performance indicators of many large corporations. But, as Kalevi Kull points out, “this [knowledge] is not sufficient to solve many ecological problems, [and] it is incapable of meeting the environmental issues of contemporary culture.”

Kull argues that, although we have a reasonable, and growing, understanding of ecological processes and human behaviour, what we do not understand, and what are “of great importance everywhere [are] the semiotic aspects of human-nature relationships...[which] are still not

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sufficiently taken into consideration [nor] understood.” I will examine these relationships through Peircian semiotics.

As I have discussed, this “wicked problem” could be viewed as what MacIntyre refers to as an “epistemological crisis,” a crisis of our understanding of knowledge, its sources, its truth and its meaning, and therefore I suggest as part of this project that we need to take a different approach to knowledge about the natural world and our place in it. But first let us consider how this is an epistemological crisis that also involves dysfunctional relationships.

MacIntyre provides an example of an epistemological crisis which is based on a dysfunctional relationship, in this case due to a drastic misunderstanding of the other party in the relationship, as follows:

They discover, that is, that there is a problem about the rational justification of inferences from premises about the behaviour of other people to conclusions about their thoughts, feelings, and attitudes and of inferences from premises about how individuals have acted in the past to conclusions expressed as generalizations about their behaviour — generalizations which would enable us to make reasonably reliable predications about their future behaviour.

In the case that MacIntyre describes there seems there has been a series of radical misinterpretations of the relationship, based on a some fundamental assumptions by one party about the other that turned out to be either completely incorrect, misinterpreted, or over-generalised. The example MacIntyre is using is one where

…someone falls in love and needs to know what the loved one really feels; someone falls out of love and needs to know how he or she can possibly have been so mistaken in the other. […] For all such persons the relationship of ‘seems’ to ‘is’ becomes crucial.

304 Ibid., p.346
Feeling Our Way to an Ecological Civilisation

Humanity’s relationship with the rest of nature certainly seems to display characteristics of drastic misunderstandings, radical misinterpretations and, indeed, a falling out of love. We might also describe it, if we consider the exploitation and abuse of the natural world by humans, as a pathological relationship. As neurologist Oliver Sacks writes in his forward to Kurt Goldstein’s classic text on psychiatry and neurology, *The Organism*, “pathology [has a] unique value in illuminating the nature of health, and of universal organismic reactions, to inner disturbances of any sort.” Sacks notes that pathology, “for Goldstein, involves a ‘shrinkage’ (or, at the least, a ‘revision’) of self and world, until an equilibrium of a radically new sort can be achieved.”

This project suggests that a consideration of semiosis as a foundation for communication and understanding between humans and the rest of the natural world in a new approach to science can help to understand and address this “pathology” and reestablish a foundation for — to apply MacIntyre’s example of an epistemological crisis — humanity’s falling back in love with nature. A Peircian semiotic approach helps to resolve our epistemological crisis concerning our understanding of the rest of nature, as it places our cognitive engagement within a semiotic framework.

I have discussed the root of today’s problems in the dualistic, mechanistic foundation of our understanding of the world and our place in it, and Kull suggests that there are six aspects to the way that humans understand nature that are creating the conditions to produce or exacerbate problems with the environment. Each of these has a communicative aspect to it that demonstrates the value of Peircian semiotics in changing attitudes...
towards our relationship with the rest of the natural world. Let us consider these aspects of the relationship one by one.

First, Kull argues that recognition of an aspect of nature to some extent decontextualises it. We can no longer see it in relation to the rest of nature without seeing it in the cultural context we have created. The classification of some plants as “weeds” is an example of how the nomination of some species of plant as useful, or decorative, changes our perception of the ecological connections of others. However, I suggest that a semiotic understanding always takes into account the cultural context and how it is shaping our attitude, particularly through the understanding of “sign displacement,” as I shall discuss in more detail later.

Next, what Kull calls “operation and remodelling (forming)” of the natural world. This shapes the environment in ways that serve us “better” as humans, but in doing so bypasses and alters “the whole structure of the environment and its webs of relationships,” breaking connections and discarding that which is not desired. In line with this project, I suggest that a greater awareness of our participation in these webs will make us more aware of how we change it through our relationships, and will help us to moderate those changes.

Third, and this is a major component of our current culturally mediated view of the world: reductionism. This, Kull notes, “has a tendency to replace the importance of the whole by the importance of particular parts,” for example the distinction between nature and culture, “which leads us to think that the processes in culture and nature are separated, and that the processes of culture or respectively of nature are more important to consider than those of the whole.” As I have argued, Peirce’s metaphysics is radically anti-reduc-
tionist, though his triadic semiotic, his synechism and Categories. And, related to reducti-
onism, through a mechanistic understanding of a phenomenon we remove the idea of value from it, placing value in a separate and decontextualised realm, if it is considered at all. I have argued for the recognition of agency and subjectivity throughout the natural world — impossible in a mechanistic understanding of nature.

Next, Kull cites “selfing and valuation,” as he explains: “Including a phenomenon into self has a tendency to assign value to this phenomenon.” However, the limits of “self” will vary widely, and could be “just one’s body, or home, or family, or farm, or country (homeland), or Gaia” and as Hugh McDonald observes with regard to theories of ethical systems, “Nominalistic theories argue that value can only be located in individuals. Holistic theories, by contrast, place value in larger, often abstract loci, such as species, ecosystems, and the biosphere.”[308] A Peircian understanding of ethics based on Firstness, aesthetics, places value throughout the biosphere or, as we might term it, the semiosphere.

Most importantly, though, in the context of a dysfunctional relationship, Kull discusses our attitude to recognition and control. In our perception of what matters in the world, distorted by dualism, everything that we recognise, we tend to use or manipulate, and eventually to strive to control. In a relationship between subjective, agentic beings, this sounds not only dysfunctional, but abusive. As John Kormondy and Daniel Brown conclude,

The Westerner’s view is that land is an adversary to be conquered, a servant to be exploited for human ends, a possession of rightful and eminent domain, and an entity of unlimited capacity. […] This view must give way to an ecological conscience, to a love, respect, admiration, and understanding for the total ecosystem of which we are a part; to

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[308] McDonald, *John Dewey and Environmental Philosophy*, p.2
an ethic that ensures the survival of the human species with quality, dignity, and integrity.\textsuperscript{309}

“Integrity” is related to wholeness, as discussed, an important aspect of aesthetics, which shapes our understanding of value and influences our actions. I argue that if we recognise subjectivity as shared throughout nature, then we recognise not only ourselves as part of nature, but nature as part of us, and this is likely to change the way that we engage with the “others” in the biosphere.

In summary, these six aspects of our understanding of nature include recognising the importance of relationships with the natural world through the recognition of agency and creativity throughout nature. It also means appreciating semiosis as a shared language with all of nature, in line with the Peircian understanding of the universe as pansemiotic, that is, consisting entirely of signs, and this also requires that we acknowledge that all life is communicative. Finally it means recognising value throughout the entire semiosphere through our felt connection with all of nature. When applied, these changes can result, I argue, in our falling back in love with the rest of the natural world, as mentioned earlier, and developing an attitude such as Dostoyevsky wrote of in \textit{The Brothers Karamazov}:

\begin{quote}
Love all God's creation, the whole and every grain of sand in it. Love every leaf, every ray of God's light. Love the animals, love the plants, love everything. If you love everything, you will perceive the divine mystery in things. Once you perceive it, you will begin to comprehend it better every day...for all is like an ocean, all is flowing and blending; a touch in one place sets up movement at the other end of the earth.\textsuperscript{310}
\end{quote}

But is this enough to begin to resolve our epistemological crisis? Let us look in more detail at the value of human ecology.

\textsuperscript{310} Fyodor Dostoyevsky, \textit{The Brothers Karamazov}, trans. Constance Garnett (Online: Feedbooks, 2014), p.254
Human Ecology: An Introduction

I have briefly discussed human ecology in the context of the importance of the recognition of community in our study of the natural world. Gare observes that Warming defined ecology as the study of “the manifold and complex relations existing between the plants and animals that form one community” and he notes that Clements referred to ecology as “the science of the community.” If, as I am arguing, the perception of humans as participants in a global community that incorporates all other communities in the biosphere is one of the keys to an ecological civilisation, then an understanding of ecology and human ecology may help us to understand, articulate and practice this.

It seems that the first publication of the term “human ecology” was in a 1908 issue of the *American Journal of Sociology* in which Albion Small quoted from a private communication with J. Paul Goode. According to Jeremy Porter and Frank Howell, “human ecology aimed to understand social phenomena through an understanding of the geographic conditions in which the individual was situated.” Ellsworth Huntington, a distinguished geographer, and one of the founders of the Ecological Society of America, further developed the field. In 1916 he was performing research examining the historical influence of climatic and seasonal weather cycles on human activities and welfare, and by building on the work of other biometeorologists, he found strong and significant correlations between the advance of culture and civilisation and environmental factors such as temperature, moisture and “storminess.” Huntington was looking at the intersection of culture, human

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311 Gare, “Human Ecology and Public Policy: Overcoming the Hegemony of Economics”, p.134
physical condition (including genetic factors) and environment, and used “Human Ecology” to describe this emerging field, and to distinguish this from more narrow enquiry cast as “biology” or “geography” or even a term coined later: biometeorology. Since then, there has been an expansion of interest and an increased focus on human ecology. But what is the relevance of this to the development of an ecological civilisation?

Peter Richerson et al., in defining the field, note that, in line with the usual definition of ecology, human ecology includes “the study of the distribution and abundance of organisms,” in this particular case, humans, and their interaction with the environment. However, as they conclude, “virtually everything that humans are or do (and the same goes for any species) affects their distribution and abundance. Thus, using the term ‘human ecology’ actually expresses a broad ambition to understand human behavior.” We can, therefore, define human ecology as “an approach to the study of human behavior” which brings in some unique strengths from ecology.

These include the idea “that humans should be studied as living systems operating in complex environments,” as opposed to the normal siloing of human sciences into “several social science, humanistic, and human biological disciplines.” This siloing, however, only exacerbates the dualistic division. But as I have argued, the relationships between humans and nature are connected to deep cultural processes, so let us consider whether a focus on human ecology through Peircian semiotics can help to mend this currently dysfunctional relationship.

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313 Ellsworth Huntington, “Temperature and the Fate of Nations”, Harper’s Magazine (1928)
Kozo Mayumi, in discussing the relationship between ecology and economics, notes the significant impact of culture on ecology. He refers to the fundamental cause of the destruction of nature, as identified by Marx, in the dialectical relationship between people and nature being executed through the exchange of economic goods. Because this fundamental relationship is mediated by culture, its significance is distorted or obscured.\textsuperscript{316}

Human ecology must also include humanistic geography, as it considers our spatial embeddedness in the natural world. As Yi-Fu Tuan notes:

[H]umanistic geography's conception of nature is...inclusive: nature is certainly plants and animals, climate and soils, but it is also the cancerous cell and the nebula. How do we humans relate to the latter? What is the meaning of human life in the midst of a nature that is so bizarre, so vast, and so indifferent to our existence?\textsuperscript{317}

And as Amos Hawley says concerning human ecology:

[A] workable relationship with the environment is achieved not by individuals or even species acting independently, but by their acting in concert through an organization of their diverse capabilities, thereby constituting a communal system. What is necessary for lower forms of life is even more compelling for human beings.[…]

[A]n understanding of the relationship of human beings to environment requires a full knowledge of the human social system. Until that is developed, an appreciation of the character of environmental influence cannot advance beyond a rudimentary level.\textsuperscript{318}

This relational view means that human ecology can be considered as a post-reductionist science and therefore will form an important component of a new approach to knowledge that will help us to achieve a civilisation that fully incorporates an understanding of humanity’s place in the rest of the natural world. In an explicit exposition of the

\textsuperscript{316} Kozo Mayumi, \textit{The Origins of Ecological Economics: The Bioeconomics of Georgescu-Reogen} (London: Routledge, 2001), pp.81, 82


\textsuperscript{318} Hawley, \textit{Human Ecology: A Theoretical Essay}, p.3
anti-dualist and post-reductionist character of human ecology, Richerson et al. offer that “[t]he traditional human science disciplines take people apart; human ecologists endeavor to put us back together.” This is essentially an anti-reductionist strategy, as they observe, perhaps with some sarcasm, that “[b]reaking complex problems down to operationally tractable parts is a great strategy, but only so long as some are committed to putting them back together in the end!” Thus, part of the value of human ecology is having a scope that includes human cultural systems, too, including economic and political systems. Let us see how this can be applied to this project.

Natural Relationships in Human Ecology

One of the central pillars of neoliberalism as the dominant ideology, and a significant obstacle to the establishment of an ecological civilisation is a particular view of economics in society. Looked at through human ecology, this provides an interesting example of the impact of culture on “rational” societal institutions and processes. Peter Miller specifically mentions our economic systems as contributing to and sustaining our current dysfunctional relationship with the world:

Modern economies have a generic flaw: they fail to take into account, in an integrated way, the facts of human ecology. The Cartesian cultural split between people and nature is expressed in ecological sciences that study every creature except humans, and economic analysis that ignores the total dependence of human economies upon ecological processes.

This dysfunctional view sees humans as mechanisms, never a part of nature, and Gare elaborates on how this perspective developed, as follows:

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319 Richerson, Mulder and Vila, Principles of Human Ecology, p.2
Through the work of Hobbes and the early economists who elaborated Hobbes’ ideas, society was construed as a mechanism in which money, functionally equivalent to blood, distributes nutrients to each component of this mechanism. The body as a whole was seen to be moved by its component egoistic individuals struggling in competition with each other to stay alive and satisfy their appetites. Conceived as something that exists and which could be studied, this economy became a reality and the competitive social relations it fostered were then projected by Darwin onto nature.  

And I argue, in line with Gare, that these assumptions came to be taken as reality, through the following metaphorical view of nature that came to be accepted as fact:

Nature came to be seen as a struggle of all against all and, so conceived, was then used by the social Darwinists as a metaphor for society. Through the incorporation into society of the mechanistic worldview in this way, we have become enclosed in a world where the natural order appears to reflect the social order and the social order appears to exemplify the natural order.

This recognises that humans are part of nature, but does not acknowledge their humanity, nor the agency that is active throughout nature — they are all just another set of cogs in the mechanism.

Bosselmann *et al.* also refer to the concept of “the web of life” from systems theory and as used by Capra and others, but they note that human ecology

…extend[s] the traditional view by including humanity in the web[,] not simply…as a biological entity…[and] natural and built surroundings…, but also of our immaterial social structures, organizations and — more abstract — our institutions and values. In this ‘multiple’ environment, we play a role as self-conscious actors with the ability to effectively and intently influence evolutionary processes in the web for better and for worse. […] [W]e must become more aware of the intrinsic interwovenness of all natural, social and value systems.

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321 Gare, “Human Ecology and Public Policy: Overcoming the Hegemony of Economics”, p.133
322 Ibid., p.133
323 Capra, *The Web of Life: A New Scientific Understanding of Living Systems*
And this “web” is also a semiotic concept, as Wheeler refers to a “web of signs” when she asserts that

…[s]emiosis is intersubjective and interactive; semiotic freedom is distributed freedom. It is not just my freedom to send whatever signs I want whilst remaining, at least consciously, an entirely selective reader of the signs I receive. It is a freedom constrained by the web of signs which signify in the human Umwelt. […] These are both natural and socio-cultural. Environmental damage, in this sense, means both damage in nature and damage in culture; these are not, essentially, different things. Environmental literacy must be understood to encompass natural, social, cultural and, by implication, emotional literacy also.  

Taking this viewpoint, understanding that our phenomenal world is both natural and cultural (which we understand, through Peirce, are synechistic), we see that human ecology leads to environmental literacy, but also emphasises the importance of emotions and feelings in our relationship with the rest of nature. This is particularly important when we consider the complexity of relationships in the natural world. If we consider relationships between humans, this is usually understood in the context of attachments, emotions and feelings. This idea is echoed in the words of Abram, who notes that:

Since the mid-nineteenth century, the study of our earthly environment has increasingly yielded a view of nature as a realm of complexly interwoven relationships, a field of subtle interdependencies from which, in John Muir’s words, no single phenomenon can be picked out without “finding it hitched to everything else.”

Abram provides the following example:

The character of an individual fruit tree simply cannot be understood with out reference to the others of its species, to the insects that fertilize it and to the animals that consume its fruit and so disperse its seeds. Yet a single one of those animals can hardly be comprehended without learning of the other plants or animals that it eats throughout the year, and of the predators that prey upon it — without, in other words, acknowledging the host of other organisms upon which that animal depends, and which depend upon it.
And it is not only other living inhabitants of the biosphere on which life depends, as Abram continues:

We have at last come to realize that neither the soils, the oceans, nor the atmosphere can be comprehended without taking into account the participation of innumerable organisms, from the lichens that crumble rocks, and the bacterial entities that decompose organic detritus, to all the respiring plants and animals exchanging vital gases with the air. The notion of earthly nature as a densely interconnected organic network — a ‘biospheric web’ wherein each entity draws its specific character from its relations, direct and indirect, to all the others — has today become commonplace.\textsuperscript{328}

Abram also suggests that this idea “converges neatly with Merleau Ponty’s…description of sensuous reality, ‘the Flesh,’ as an intertwined, and actively intertwining, lattice of mutually dependent phenomena, both sensorial and sentient, of which our own sensing bodies are a part.”\textsuperscript{329}

As the relatively new field of human ecology has expanded the ecological turn to include human civilisation, and thus move toward a more holistic understanding of ecology, in this it reflects the findings of quantum physics. The classic reductionist view of physics would point to mathematics as holding the key to understanding the universe.\textsuperscript{330}

However, quantum theory suggests what might be considered as the ultimate ecological viewpoint. Although David Bohm and Basil Hiley do not mention “ecology,” in their book\textit{The Undivided Universe: An Ontological Interpretation of Quantum Theory} they do discuss “indivisible quantum processes that link different systems in an unanalysable way” and that the way we view the world “in some suitable classical approximation [is] a simplified picture of the world as made up of separate parts in interaction.” They go on to suggest

\textsuperscript{328} Ibid., p.84
\textsuperscript{329} Ibid., p.84
\textsuperscript{330} David Bohm and Basil J Hiley, \textit{The Undivided Universe: An Ontological Interpretation of Quantum Theory} (London: Routledge, 1995), p.320
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that “Underlying all this is unbroken wholeness even though our civilisation has developed in such a way as to strongly emphasise the separation into parts.”331 This seems to strongly echo Peirce’s Synechism, and highlights the need for a change to our civilisation in line with this project.

In a more complete definition, Gare describes human ecology as the science which

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\text{…[deals] with the structures or institutions and emergent processes associated with people's transformations of their physical, biological, socio-cultural environments, encompassing geography, political economy, sociology, politics and law, [and as] a complex of processes and structures within the global ecosystem and providing new insights into why civilisations collapse, and what is required to avoid such collapse.} \]

And it is important to consider that many mythological conceptions of the place of humans in nature could be seen as ideas of a human ecology. Many of these ideas encapsulate a holistic view of the universe, placing human beings as a natural part of the ecosystem. However, Descartes and his contemporaries were deeply influenced by Biblical narrative of the Judaeo-Christian God who commands the first human pair in Genesis 1:28: “Be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl in the air, and over every living thing that moveth upon the earth (italics added).”

Kull suggests that another example of a dysfunctional relationship between human culture and the rest of nature can be seen in the society of Easter Island, where the building of stone statues as a religious act resulted in the desolation of the forest on the island, and after this their culture completely degenerated and disappeared. As Kull argues for the importance of considering this semiotically:

331 Ibid., pp.352, 419
332 Gare, *Nihilism Inc: Environmental Destruction and the Metaphysics of Sustainability*, p.405
Besides constructing our understanding of nature, we also construct the surrounding nature itself. The ecological processes and dumping grounds enfold Umwelt and Innenwelt, their real sphere is the semiosphere. Therefore, without understanding the semiotic mechanisms which determine the place of nature in different cultures, one has little hope of solving many serious environmental problems, and of finding the stable place of culture in nature.\(^{334}\)

Peirce’s general theory of signs and their interpretation is oriented towards action and change, and it also reveals the extent to which semiosis pervades nature. Situating humanity, not as custodians of “nature,” but as a socially constituted component of the natural world, enables us to consider our own potential for constructive participation in the biosemiotic processes that connect cell to civilisation via the hosts of human and non-human communities that constitute our global home.\(^{335}\) Kull also suggests that

…semiotics, somehow analogically to this ecological program, can be seen as a large project to get free from the dualism of mind and matter through the demonstration of the triadic nature of all primary and secondary processes of interpretation, which all are to be embedded in the semiosphere.\(^{336}\)

So, human ecology, extended by Peirce’s semiotic, can help to understand and redefine the relationship that we have with the rest of nature. Let us consider how this is achieved.

**Humanity in Nature, Semiotically**

I argue that this focus on relationships could form part of a new epistemological paradigm, as according to Thomas Kuhn a paradigm includes within its scope “rules and

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\(^{334}\) Kull, "Semiotic Ecology: Different Natures in the Semiosphere", p.346  
\(^{335}\) Gare, "From Kant to Schelling and Process Metaphysics: On the Way to Ecological Civilization"  
\(^{336}\) Kull, "Semiotic Ecology: Different Natures in the Semiosphere", p.349
standards for...practice,” as well as “an entire constellation of beliefs, values and tech-
niques.” Kuhn, of course, is referring to paradigms for scientific enquiry, the “natural
philosophy” of understanding the world and our place in it. This new approach to “sci-
ence” that I am proposing could place greater emphasis on what Kozo Mayumi refers to
as problem-solving rather than curiosity or “puzzle-solving.” I suggest that in order to
do this it needs to be more cognizant of the connections between social, technical and
ecological dimensions of scientific enquiry into nature. But let us consider how we might
work with Peircian semiotics to resolve this crisis of relationships, a crisis based on a faulty
epistemology. I will, therefore, examine a semiotic approach to understanding our rela-
tionship with the other participants in the biosphere.

The “semiotic sphere” (and I will consider Uexküll’s concept of the Umwelt as a
manifestation of this) tells us that ecological relations are communicative, and ecosystems
thus rely on the intersection of multiple semiotic spheres for many species. This means
that the disturbance and destruction of ecosystems and the dissolution of cultural meaning
are also interrelated, and therefore it may be possible to develop scientific perspectives
that simultaneously humanise nature and naturalise society. But how do we view the
acquisition of knowledge of nature, or science, through Peircian eyes?

Peirce describes “the method of science” (CP 5.387) as a “community of inquir-
ers...conversing together and regarding matters in different lights, [which] gradually de-
velop beliefs in harmony with natural causes” (CP 5.382). And he also suggest that this
community, in scientific inquiry “grind[s] off the arbitrary and the individualistic character

337 Thomas S Kuhn, The Structure of Scientific Revolutions (Chicago, IL: University of Chicago
Press, 1996), pp.11, 185
339 Hornborg, “Money and the Semiotics of Ecosystem Dissolution”, p.149
of thought” (CP 1.178). Peirce applies this to a community of human enquirers, but I am suggesting here that the community of which we are a part should be seen as a community of all living things, and this understanding may enable us to include the perspective of these non-human members of the community in the process of “grind[ing] off [of] the arbitrary and the individualistic character of thought.”

We therefore need to find a way to restore a recognition of the value of experience and emotion to what Søren Brier refers to as “the current empirically and mathematical based physico-chemical scientific paradigm.” Brier argues that “a first person point of view which gives primacy to conscious, meaningful experience as based on…Peirce’s phaneroscopic approach” would enable this to happen. This is also what I am arguing for in this project, as an ecological civilisation would be a culture that is grounded on “human embodied, localized, living, creative personal as well as interpersonal semiotic intelligence, as part of both living nature and human culture.”

We need an approach to knowledge (and by implication, science) which discards an instrumental, exploitative perspective on the natural world for one which recognises that the only way to understand nature and live with respect for the home that we share is by changing the foundation of our enquiry into nature. This is by recognising a non-dualistic viewpoint that others in the biosphere are subjects, too, not objects to be used as we wish. So let us now consider how Peirce’s semiotic enables us to overcome these dualistic, exploitative notions of nature.

With Peircian semiotics the dualistic approach is cast aside, and the synechism of all of nature is recognised. As Brier explains,

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Peircian semiotics breaks with the traditional dualistic epistemological problem of first order science by framing its basic concept of cognition — signification — within a triadic semiotic philosophy. The triadic semiotics is integrated with a theory of continuity between mind and matter (Synechism) where the basic three categories (Firstness, Secondness, and Thirdness) are not only inside the perceiver's mind, but also in the nature perceived.\textsuperscript{341}

Peirce's Categories deal with the nature of the world, based on experience, thought and imagination; Peirce's Semiotic deals with the structure of thought and examines the role that rational thought plays in our understanding of the natural world. As Kelly Parker notes, “This implies that there is a meaningful distinction between thought and the world, or better, between the subjective and objective features of experience.”\textsuperscript{342} This has been termed “semiotic idealism,” and as Parker continues,

Semiotic idealism...is the thesis that whatever there is depends upon representation and interpretation, upon the activities of mind constituting sensemaking, for its existence....[S]emiotic idealism maintains that what there is, is of the nature of a sign. [...] Peirce...clearly and repeatedly asserts that all the activity of any mind consists in sensemaking.\textsuperscript{343}

Semiotics enables us to find a common language to study our relationship with nature, and enables “mind” to be included in this examination, not viewed as something separate from nature, and therefore enabling agency and creativity to be understood as something that exists also beyond the human realm. I will discuss later the importance of understanding this common language. Bruni suggests that what I earlier referred to as an epistemological crisis is “in reality a cultural crisis” and he argues that, in order to be able to discuss “the nature-culture interface, or the ecological-anthropological realm, [then] semiotics looks like a privileged tool in this endeavour.”\textsuperscript{344} And Peircian semiosis also

\textsuperscript{341} Ibid., p.2
\textsuperscript{343} Ibid., p.65
\textsuperscript{344} Bruni, "Biosemiotics and Ecological Monitoring", p.294
enables us to remove the divisiveness of dualism in our epistemological approach. Raymond Williams suggests that

…[a]t one level we can oppose art to science, or emotion to reason, yet the activities described by these names are in fact deeply related parts of the whole human process. We cannot refer science to the object and art to the subject, for the view of human activity we are seeking to grasp rejects this duality of subject and object: the consciousness is part of the reality, and the reality is part of the consciousness, in the whole process of our living organisation.\(^{345}\)

But as Brier explains, after Deely,

…the Peircian semiotic [paradigm is a] transdisciplinary [paradigm], suggesting solutions to our scientific problems of making a unified theory of nature, cognition, and mind. This is contrary to the traditional mechanistic scientific paradigm, where concept of mind as inner life has to be outside of the theory (italics added)\(^{346}\)

Our aim is to heal the dualistic split that forms the foundation of our problematic relationship with the rest of the natural world by reintegrating experience and the recognition of the universality of agency into our “scientific” understanding of the world, and therefore recognising all inhabitants of the earth as subjects along with us. As part of nature ourselves, we are also participants in the global process of the production and interpretation of signs. As Wheeler asks, “What is Homo sapiens, if not the creature that lives and creates in signs?” And this may also help to heal the rift between man and the rest of nature, as Wheeler continues, “the semiotic nature of human beings will prove central — both in drawing attention to the fundamental nature of their sociality, and in showing its evolutionary and ontological dependence upon natural and cultural environments.”\(^{347}\)


\(^{346}\) Brier, “The Cybersemiotic Model of Communication: An Evolutionary Model of the Threshold Between Semiosis and Informational Exchange”, p.258

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This helps to build a connection across the "unbridgeable ontological wall," which separates us from nature. As Wheeler suggests, “[i]t is not by looking at things that we understand them, but by dwelling in them.”

Hornborg discusses the idea of “disembedding,” which refers to the alienation of persons, objects or concepts from the contexts from which they have previously derived their meaning, and which is a thoroughly semiotic concept. Therefore, this new approach to knowledge needs to consider semiosis as a fundamental way of understanding the processes of the biosphere and how we as humans participate in them. It needs to be a practice of enquiry that is able to cope with the systemic uncertainties, ethical complexities and conflicting purposes of the activities of humans as part of the world ecology, recognising its unpredictability, futility of attempting to achieve complete control, and the plurality of legitimate perspectives, including those of other non-human inhabitants of the semiosphere.

So let us now consider how Peirce’s semiosis can be understood to extend throughout the natural world.

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348 Morton, “Thinking Ecology: The Mesh, the Strange Stranger, and the Beautiful Soul”, p.288
350 Hornborg, "Money and the Semiotics of Ecosystem Dissolution", p.149
Chapter 8: Natural Significance

In this chapter I discuss Peircian semiosis in more detail, and demonstrate its applicability to understanding all of the natural world, not just human culture, and not only living organisms. I argue that semiosis is a characteristic that we share with all of the rest of nature, and that understanding this helps us to recognise sentience and agency — and also value — as a fundamental quality of all life. To this end, I discuss biosemiosis, as well as semiosis on the level of ecosystems: ecosemiosis. I also consider how cybersemiosis can become an integral part of a transdisciplinary approach to scientific enquiry, an approach which is vital in order to address the multiple “wicked problems” faced by humanity and the rest of nature today.

Seeing Semiotic Systems Everywhere

SEMIOTICS, AS THE STUDY of the meaning of signs and their relationship to nature, has been practiced since Aristotle’s day, but Donald Favareau points out that this was confined to the human realm, and he observes that rationality has taken primacy over the experience of nature, as he states that:

[T]he centrality of the Aristotelian Organon as the primary “instrument of logic” throughout the whole of the Middle Ages — without the corresponding Aristotelian texts on nature and biology — meant that the focus of the next dozen centuries, at least as far as the investigation into “sign relations” is concerned, would proceed from Aristotle’s meditations of the sign exclusively as it is manifested in human experience. 351

This restricted the semiotic study of subjectivity to a sub-set of the semiosphere, the human realm. As Marcello Barbieri observes,

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351 Favareau, "The Evolutionary History of Biosemiotics", p.8
Not surprisingly, then, did William of Ockham (1287–1347) exacerbate the incipient dualism between extra-mental relations and sign relations by asserting that the universal properties of things were merely the universalizing mental signum (signs) of human minds. In such ground did the seeds of an increasingly mentation-centric nominalism flourish, and the self-reinforcing “humanification of the sign” progress.\textsuperscript{352}

Peirce’s synechism applies equally to his semiotic, and therefore the breadth of its applicability can span all the activity in the biosphere, from cellular to cultural. Peirce’s semiotics is able to bypass Eco’s “semiotic threshold,” which is described by Nöth as

\begin{quote}
\ldots a lower and an upper threshold beyond which the topics of research fall into the domain of sciences other than semiotics, with the lower threshold of semiotics being "that which separates signs from things and artificial signs from natural ones."\textsuperscript{353}
\end{quote}

This “threshold” places boundaries on the application of semiosis in the understanding of the natural world. For example,

\begin{quote}
Physiological stimuli, most natural indices, physical information, neuro-physiological and genetic “codes” are below his semiotic threshold, since they are not based on social conventions. [But] this threshold is not a sharp boundary. Zoosemiotics, for example, is included in the semiotic field insofar as it provides evidence that even on the animal level there exist patterns of signification which can, to a certain degree, be defined as cultural and social.\textsuperscript{354}
\end{quote}

Eco himself nicely frames this debate (perhaps unintentionally) in terms of holism versus reductionism, and synechism (as Peirce would term it) versus discontinuity, when he asserts that “the proper objects of a theory of information are not signs but rather units of transmission which can be computed quantitatively irrespective of their possible meaning, and which therefore must properly be called ‘signals’ and not ‘signs’.”\textsuperscript{355} He allows, however, that the “phenomena on the lower threshold should rather be isolated as indicating the point where semiotic phenomena arise from something non-semiotic, as a sort

\textsuperscript{352} Ibid., p.11  
\textsuperscript{353} Winfried Nöth, \textit{Handbook of Semiotics} (Bloomington, IN: Indiana University Press, 1995), p.231  
\textsuperscript{354} Ibid., p.231  
\textsuperscript{355} Umberto Eco, \textit{A Theory of Semiotics} (Indianapolis: Indiana University Press, 1979), p.20
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of ‘missing link’ between the universe of signals and the universe of signs.” But let us consider the pervasiveness of semiosis in the natural world and how semiosis in the non-human world can be understood.

I argue here that, in order to avoid dualistic thinking and to fully understand ecological issues we would need to ensure that not only human cultural semiosis and the semiosis of animals is included inside the “threshold” but, considering their mutual dependency, also the semiosis of plants, bacteria, and all forms of life, known as biosemiosis. According to Wheeler, biosemiotics as a field of study developed in the early 1980s from a combination of three areas of study. These included Peircian semiotics, the content of Uexküll’s *Theory of Meaning*, including the ideas of the Umwelt, and Thomas Sebeok’s development of zoosemiotics, which is the study of animals’ use of semiosis. And as Hoffmeyer, with regard to the semiotics of life, says of the boundary between the

…two kingdoms, those of mind and of matter, the cultural and the natural spheres,…the humanities and the natural sciences,…it is this boundary that biosemiotics seeks to cross in hopes of establishing a link between the two alienated sides of our existence — to give humanity its place in nature (italics added).  

In 1963 Seboek introduced the term zoosemiotics for “the discipline, within which the science of signs intersects with ethology, devoted to the scientific study of signalling behaviour in and across animal species.” Seboek suggests that

Human semiotic systems are of two kinds: anthroposemiotic, that is, species-specific systems of man; and zoosemiotic, that is, those component subsystems of human communication that are found elsewhere in the animal kingdom as well.  

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356 Ibid., p.21
359 Thomas Sebeok, "Zoosemiotic Components of Human Communication," in *A Semiotic Landscape: Proceedings of the First Congress of the International Association for Semiotic Studies, Milan,*
Biosemiotics, though, is broader in scope than this. Supporting this view, Jørgen Johansen and Svend Larsen argue that semiosis exists in realms other than the zoological:

Cells send signals to one other, …and bees communicate. In other words, semiotic processes operate beyond our own cultural domains. Nevertheless, such processes also involve humans, for we too are built up of cells…[and] sign-processes are material phenomena anchored in a concrete reality.  

Brier refers to biosemiotics as the study of

…the production, action and interpretation of signs, such as sounds, objects, smells, movements but also signs on molecular scales in an attempt to integrate the findings of biology and semiotics to form a new view of life and meaning as immanent features of the natural world.

And as Kull observes, “[Biosemiotics] investigates semiosis in the living which is much broader than human life, i.e. which exists beyond the mental (conscious).” It is this extensibility that provides the potential for biosemiosis to be of such value in our study of the conditions for an ecological civilisation as part of a new approach to epistemological enquiry. As mentioned, life and semiosis can be seen as coexistent, therefore, Brier continues:

The biology of recognition, memory, categorization, mimicry, learning and communication are of interest for biosemiotic research, together with the analysis of the application of the tools and notions of semiotics such as interpretation, semiosis, types of sign and meaning.

Barbieri refers to Peirce’s view of the universal tendency of all semiotic systems to “take habits” when he adds the following perspectives to these definitions:


Brier, "Biosemiotics", p.2


Brier, "Biosemiotics", p.2
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Biosemiotics deals with habit taking in this precise sense, as exhibited by living cells and the interactive patterns in which they take part, i.e., as organisms or as supra-individual entities. [...] It is an empirical scientific fact that the equivalent of measuring processes do undoubtedly take place in every living system, and this basic semiotic activity alone amply justifies the study of living systems as semiotic entities.  

If we understand organisms as interacting semiotically, through signs as messages, rather than mechanically, then we will agree with a number of thinkers who, as Tommi Vehkavaara notes, suggest that “the sign rather than the molecule is the basic unit for studying life.” This can lead to the definition of biosemiotics as “the science of signs in living systems.” Beever and Tønnessen concur with regard to the anti-mechanistic value of biosemiotics, showing how it supports the understanding of experience, agency and intentionality, and therefore returns the subjective to an area of study, as it finds biological information to be messages rather than mechanisms: a naturalistic intentional/purposive attitude rather than a reductionist mechanical one. [...] Meaning-generation, phenomenological experience, qualitative changes, and intentionality in general are all markers of the biosemiotic approach to living systems.

But how deeply does semiosis pervade the biosphere?

Here Peirce’s idea of synechism, or continuity, again shows its value in shaping our understanding of the natural world. It is easy to see the operation of semiosis among insects (for example, the dances of bees), between brain synapses, within and between cells, and between organ systems. And therefore, as Barbieri argues, “[...] the discovery

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of the genetic code suggested that the cell itself has a semiotic structure, and the goal of biosemiotics became the idea that all living creatures are semiotic systems.”

Sign interpretation also takes place at the organism and the cellular level of plants. Also included in biosemiotics is phytosemiotics, which Krampen describes as “the semiotics of plants, …parallel and on an equal footing with anthroposemiotics.” As an example of this, a study published in 2014 found that at least some plants can detect the acoustic energy generated by the insects feeding on their leaves, as manifested by the eliciting of chemical defences against the insects. The study found that the plants are able to discriminate noise vibrations caused by the feeding of the insects from noises from wind or insect song. The study spoke of the semiotic content of the process as it stated that, “Plants…respond to herbivore-generated vibrations in a selective and ecologically meaningful way,” which suggests the presence of a “vibration signaling pathway [which] may represent a new long distance signaling mechanism in plant–insect interactions that contributes to systemic induction of chemical defenses.”

Wheeler cites Montalverne who supports the concept of semiosis as pervading all life, when he asserts that,

Although zoosemiotics and anthroposemiotics suggest some discontinuity between ethologically-grounded communication and species-specific genres of humans, this oversimplifies the more interesting realities, as has often been noted...plants communicate complex messages, including tree-to-tree pheromonal warnings about caterpillar predators... This is but to indicate that study and documentation of plant-plant and plant-animal-plant communication has grown vastly over the past decade.

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367 Favareau, “The Evolutionary History of Biosemiotics”, p.ix
Although biosemiotics is still confined to the realm of the living, the definition of “semiotic system” would enable its extension to the rest of the natural realm, and all elements of the biosphere — which would need to include non-living elements such as soil, the atmosphere, water, and everything else that is essential for life on earth.

Ecosemiotics: Our Significant Home

But is it possible to apply semiotics to study the relationship between human nature, including human culture and its current dualistic foundation, and the rest of the natural world, as in human ecology that we have discussed previously? We can consider now the question that Barbieri poses: “[W]hat is a semiotic system?” His response is that, according to cultural semiotics, there are two answers to this question. One is the model proposed by Ferdinand de Saussure, who defined a semiotic system as a duality of “signifier and signified” or “sign and meaning”. The other is the model of Charles Peirce, who pointed out that interpretation is an essential component of semiosis and defined a semiotic system as a triad of “sign, object and interpretant.”

This triadic system avoids the dead-end of Saussure’s anthropocentric semiotic duality and allows for deep analysis that reaches from the cellular to the cultural level, therefore enabling the discernment of relations of the living to the non-living realm — including the ecosystem at the biochemical level, but without reducing it to this. This helps us to understand how ecological relations are communicative, and to understand how ecosystems and cultural meaning are also interrelated. As Barbeiri continues:

[C]ultural semiotics can be regarded as a special case of biological semiotics, or biosemiotics, a science that started by studying semiotic phenomena in animals and then was gradually extended to other living creatures.

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371 Favareau, "The Evolutionary History of Biosemiotics", p.ix
372 Ibid., p.ix
Providing support for this view, Hornborg explains:

Peirce’s framework…suggests that such formal properties of sign relations are variously identifiable for instance in the biochemistry of organisms, plant and animal communication in ecosystems, and the various sign systems of human societies.\footnote{Hornborg, "Money and the Semiotics of Ecosystem Dissolution", p.146}

Therefore, we can include not only zoosemiotics, but biosemiotics and ecosemiotics — which can include human culture as a semiotic aspect of the entire global ecosystem — in our epistemological enquiry. Therefore, the semiosis of an organism is impacted by and itself shapes the semiotic life of a wide range of other organisms. Deely continues to describe the scope of this:

So far we have noted that semiosis, in the fullest sense of the action of signs, extends well beyond the boundaries of culture, as even well beyond the boundaries of animal societies, to include the dynamics of plant life and even the dynamics of chemistry and physics down to the quantum level insofar as there is a question of future outcomes and law governed interaction.\footnote{John Deely, \textit{Basics of Semiotics} (Indianapolis, MI: Indiana University Press, 1990), p.67}

“Law governed action” is a manifestation of Peircian Thirdness, and Peirce himself describes the scope of semiosis as extending beyond living systems:

The action of a sign generally takes place between two parties, the utterer and the interpreter. They need not be persons; for a chameleon and many kinds of insects and even plants make their living by uttering signs… Who is the utterer of signs of the weather…?

(NEM III:1:481)

As Vehkavaara notes, we can apply the idea of “biological processes as sign processes” from the cellular level to the ecosystem level, without discarding “well-established and understood physical and chemical laws.”\footnote{Vehkavaara, “Natural Self-interest, Interactive Representation, and the Emergence of Objects and Umwelt: An Outline of Basic Semiotic Concepts for Biosemiotics”, p.548} And this extends, too, into the human cultural realm. As Deely notes:
...the sphere of human culture is but relatively (italics in original) autonomous, as transcending, but only by incorporating and resting upon, a physical environment shared with all the forms of biological life in a larger network biosemiosis of mutual dependence. The understanding of that larger whole precisely in terms of semiosis defines the complete task of which cultural semiotics forms a part.376

Peirce’s broad definitions of signs and interpretants enables the extension of the field of semiotics beyond humanity to the study of semiosis in the rest of nature. As mentioned previously, Peirce suggests that “all this universe is perfused with signs, if it is not composed exclusively of signs” (CP 5.448), and this enables us to use this non-dualistic method of study across all aspects of nature, including the relationship of humans, and their culture, to the rest of nature. We can also consider the semiotics that occurs in ecosystems.

Ecosemiotics refers to the semiotic aspects of interactions and relationships between organisms and the environment. Kull provides a clear definition:

[Ecosemiotics is ] the semiotics of relationships between nature and culture [,and incorporates] research on the semiotic aspects of the place and role of nature for humans, i.e. what is and what has been the meaning of nature for us, humans, how and in what extent we communicate with nature. Ecosemiotics deals with the semiosis going on between a human and its ecosystem, or a human in one’s ecosystem.377

And as I have argued, one of the strengths of the semiotic approach is that it enables the study of the connection between human culture and the rest of the environment. Max Oelschlager notes that the “truth that drives the ecosemiotic thesis is that…cultural processes of selection (economic, political, philosophical, religious, and so on) are finally subject to natural selection.” The implication of this is that the human species may be naturally selected out — and because of the “pervasive disconnection between the dominant

376 Deely, Basics of Semiotics, p.7
cultural codes and the natural, underlying systems upon which all cultures depend” this possibility appears to be well on the way to becoming a reality.\(^{378}\)

If we consider our relationship with the rest of nature through ecosemiotics, we have the opportunity to overcome many of the dualisms that separate us from the natural world. Unfortunately, the dominant view of nature and our relationship with it is that human culture is separate from the rest of nature. As I have argued, this is a dangerously false assumption. Deely argues that

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\ldots \text{the sphere of human culture is but relatively autonomous, as transcending, but only by incorporating and resting upon, a physical environment shared with all the forms of biological life in a larger network — biosemiosis — of mutual dependence. The understanding of that larger whole precisely in terms of semiosis defines the complete task of which cultural semiotics forms a part.}^{379}\]

But how does humanity understand “its place in nature,” without seeing itself as separate from it?

Olga Panzaru suggests that ecosemiotics may hold the key to our ability to understand both our interaction with and our being situated within nature. By using the semiotic framework of Peirce she describes how the relationships between organisms and the environment go beyond mere “chance encounter,” as this, in Peircian terms, would be merely dyadic and therefore not semiotic. Experience of the environment by an organism is always an interpretive encounter, and takes place in the context of a Peircian “Third” as “a meaning, purpose, goal, or law which transcends the immediate environmental situation.”\(^{380}\) Ecosemiotics also takes the position that organisms have both an exterior and an


\(^{379}\) Deely, *Basics of Semiotics*, p.7

interior environment and, as Nöth suggests, any organism interacts semiotically with its environment when it makes a selection from options for the purpose of its own survival,\textsuperscript{381} thus it is agentic and communicative. This has strong implications for our own understanding of the dependence of human culture on the environment. As Panzaru explains, the scope of eosemiotics is wide enough to

\ldots[describe] the appearance of nature as dependent on the various contexts and situations. It includes nature’s structure as it appears, its classification (syntactics); it describes what it means for people, what there is in nature (semantics); and it finds out the personal or social relation to the components in nature (pragmatics). In all this, it includes the role of memory and the relationships between different types of memory in culture. Due to considering the evolutionary aspect, eosemiotics also extends to non-human systems.\textsuperscript{382}

I agree with Kull that “eosemiotics may become a large and important field of research with considerable practical applications” and, in line with our central argument of the harm done by dualism, he notes that

\ldotsit is hard to see how ecology can be our guide and mentor in managing nature when it keeps splitting the world up into two distinct sectors — the natural and the cultural — thereby upholding all of the emotional superstructure, all the illusions, that alienate us from nature. In this, the eosemiotic project remains apart.\textsuperscript{383}

He also defines it as

\ldotssubjective human ecology (considering under ‘subjective’ here the meaning given by J. v. Uexküll), or in other words, it is human ecology as extended toward semiotics, human ecology from the semiotic point of view.\textsuperscript{384}

But let us now see how human ecology and semiotics can be extended to form part of a new approach to knowledge that, in line with Peirce’s metaphysics, recognises semiosis throughout our world.

\textsuperscript{382} Panzaru, "Introduction to Eosemiotics", p.419
\textsuperscript{383} Kull, "Semiotic Ecology: Different Natures in the Semiosphere", p.348
\textsuperscript{384} Ibid., p.348
Cybersemiotics: A Transdisciplinary Turn in Science

To provide a greater depth and scope to semiotics in the natural world it is possible, also, to extend Peircian semiotics into cybersemiotics in order to incorporate aspects of autopoiesis. Cybersemiotics describes a fundamental dialectic among structure, process and the function system theory of social communication as defined by Niklas Luhmann. It also integrates cognitive semantics as defined by George Lakoff and, as Thellefsen states, “all this in order to unify the living and cultural world with the non living natural and technical world, which are the realms of information and computation.” As can be gleaned from this description, cybersemiotics provides a framework that reaches across many disciplines, which well suits a method of tackling a “wicked problem,” as discussed in our introduction. Brier suggests that cybersemiotics forms a key component of “a philosophical frame-work for a transdisciplinary information science or a semiotic doctrine,” and he defines this as a ”combination of a Peircian-based biosemiotics with autopoiesis theory, second order cybernetics, and information science…in a five-levelled cybersemiotic framework.”

Cybersemiotics brings together the disciplines of cybernetics and semiosis in order to better understand the complex systems inherent in the natural world and how they communicate. Cybernetics studies complex systems with particular emphasis on communication, information exchange and feedback loops. It also enables subjective experiences

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385 Brier, "Biosemiotics", p.24
386 Torkild Thellefsen, "Fundamental Signs and Significance-effects: A Semeiotic outline of Fundamental Signs, Significance-effects, Knowledge Profiling and their use in Knowledge Organization and Branding" (Copenhagen Business School, Copenhagen, 2009), 10., p.10
387 Brier, "Biosemiotics", p.25
388 Brier, "The Cybersemiotic Model of Communication: An Evolutionary Model of the Threshold Between Semiosis and Informational Exchange", p.255ff
such as perceptions and desires to be incorporated as part of “scientific” enquiry. As Paul Cobley states,

Cybersemiotics, in forging a new philosophy of science, addresses the failure of all disciplines to recognize and adequately account for qualia and motivation…[I]t criss-crosses the sciences and the humanities and invokes knowledge from both…. [T]hrough Peircean phaneroscopy, cybersemiotics is one of few frameworks which factor first-person experience as central…

And this can include all natural subjects, as according to Peirce,

Phaneroscopy is the description of the phaneron; and by the phaneron I mean the collective total of all that is in any way or in any sense present to the mind, quite regardless of whether it corresponds to any real thing or not. (CP 1.284)

This idea is reinforced by the fact that Uexküll himself illustrated behaviour as a regulated process when he used the concept of the Funktionskreis (functional cycle) which enables regulation and control in organisms via negative feedback loops. Rüting claims that “Uexküll’s models can be seen as the predecessors of cybernetic models [and] Uexküll has been discussed as a pioneer of cybernetics and artificial intelligence studies.”

We can also consider the connections between biosemiotics and cybernetics.

As Alexei Sharov notes, biosemiotics and cybernetics are closely related, however, biosemiotics deals with living organisms, whereas cybernetics usually is applied in the non-organic realm. Both, though, study agents that perform goal-oriented functions. Cybersemiotics, however, can to some extent examine both living and non-living signification. As Brier notes:

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389 Paul Cobley, "Cybersemiotics and Human Modelling", *Entropy (Basel, Switzerland)*, 12, no. 9 (2010): 2045-2066, p.2048
The question that is now becoming essential for the whole debate about the possibility of a transdisciplinary information/signification science is, if the biosemiotic Peircian framework that includes and reformulates Jacob von Uexkull’s theoretical biology will comprise uninterpreted ‘natural’ objects as signs? [For example,] autocatalytic and dissipative structures that emerge by the spontaneous generation of order and patterns in nature.  

Elsewhere, Brier suggests that what makes cybersemiotics different from other approaches is its naturalism, whereby it includes, life, consciousness and cultural meaning all as part of nature and having arisen through evolution, and that experiential and intersubjective sign processes represent the ground of reality, from which arise our conceptions of ourselves, action, meaning and the world.  

Empirical science, biology, humanities or social sciences are all considered as contributing equally to our understanding of the world, but that these are fundamentally different to other knowledge systems such as religion, political ideology and embodied praxis. When describing the motivation behind the development of cybersemiotics, Brier notes that Western culture needs to move to a knowledge culture based on information and communication technology, a culture that is grounded on “human embodied, localized, living, creative personal as well as interpersonal semiotic intelligence, as part of both living nature and human culture.”  

He describes it as an intersection of four “knowledge traditions,” as follows: First, the reductive, objective, empirically and mathematical based physico-chemical scientific paradigm. Second, an approach based on biology and natural history. Third, the approach that eschews empirical truth for a constructivist approach that sees all knowledge as mean-
ing constructed by the language, cultural mentality and power. Finally, a phenomenological (in Husserl's view) or phaneroscopic (from Peirce's perspective) first person point of view which gives primacy to conscious, meaningful experience.

Thus, with a core understanding of knowing and experiencing as a semiotic activity, it attempts to combine perspectives from embodiment via evolution, our inner mental world, our cultural and historical background via society and language — including religion, art, fiction, politics and ideology, and our physical nature, as it has emerged from physical processes from the beginning of the universe. As Brier explains it: “A theory of signification and how meaning is produced through signs is needed to connect human consciousness with a theory of nature and information.”

However, this is not to focus on the individual to the neglect of socially constructed meaning. As Eco states, “if the sign does not reveal the thing itself, the process of semiosis produces in the long run a socially shared notion of the thing that the community is engaged to take as if it were in itself true.” This foundation in Peircian semiotics anticipates that the observer might be understood through first-person experience, but that the observer resides in a (Peircian) community of interpreters.

As cybersemiotics incorporates the observer along with the observed it provides a powerful tool for examining the role of anthropomorphism in scientific enquiry. Cobley suggests that this may include the examination of conflict in the natural world, including that between humans and other organisms, and also developing a better understanding of

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395 Cobley, “Cybersemiotics and Human Modelling”, p.2061
396 Brier, “Cybersemiotics: An Evolutionary World View Going Beyond Entropy and Information Into the Question of Meaning”, p.1904
397 Umberto Eco, "Unlimited Semiosis and Drift," in The Limits of Interpretation (Bloomington, IN: Indiana University Press, 1990), p.41
398 Cobley, "Cybersemiotics and Human Modelling", p.2062
Feeling Our Way to an Ecological Civilisation

evolutionary principles, going beyond the mere consideration of survival as a mark of fitness, but examining the success of their modelling systems as a contributor to their development and continued existence. Thus, cybersemiosis may be incorporated as part of a new approach to knowledge that, in line with Peirce’s metaphysics, recognises semiosis throughout our world.

So, having extended the concepts of human ecology, via the consideration of the pervasiveness of semiosis, to the whole of the natural world, let us consider Uexküll’s concept of the Umwelt, to examine how it may help us to better know our fellow citizens of the biosphere as communicative, agentic subjects alongside us.

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399 Ibid., p.2061
Chapter 9: Semiosis in the Umwelt

Jacob von Uexküll’s work on the phenomenal worlds that exist throughout nature is discussed in this chapter as demonstrating that an approach to the study of nature that is semiotically-based, and does not separate agency and sentience from the physical world, can be scientifically rigorous and at the same time of great value in enabling us to see ourselves as part of nature rather than apart from it. I argue that this also helps us to reconfigure the internal models that we use to help us to understand the world, and remove the distortions of dualism. I assert the importance of metaphor in the work of Uexküll and others in situating ourselves within the natural world, and enabling a complete rationality that does not devalue the experience of nature.

The Origin of the Umwelt

AS I HAVE DISCUSSED, understanding the current ecological crisis through Peircian semiosis not only enables a deep understanding of the root causes of the crisis, but also helps identify and articulate a way forward for knowledge acquisition, and application of that knowledge for change. Jakob von Uexküll’s concept of the Umwelt, a pragmatic application of semiotic concepts to the phenomenal world of human and animal life, can help to build an understanding at the level of Firstness, or feeling, the concept of a shared experience of the world, and therefore an empathic and deeply felt understanding of the importance of the environment to all life on earth.

The Umwelt, as I shall explain, is a characteristic feature of all living organisms, and I will suggest that the concept of Umwelt unites — through semiosis — the biological and human sciences, and enables us to appreciate creativity, communication and agency
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throughout the living world. This non-reductionist, non-dualistic approach to living systems echoes Rosen’s observation that “what is important in biology is not how we see the systems which are interacting, but how they see each other,” with the “they” obviously including we ourselves, and the way that we “see” the rest of nature.

I will situate our discussion of the Umwelt in the context of Peirce’s work, although, according to Uexküll’s son, Thure:

[Jakob von Uexküll] knew neither Peirce nor [semiotician] Saussure and did not use their terminology, [and] his theory cannot easily be accommodated to any of the known semiotic schools of thought. […] Whether and to what extent he came into contact with Peirce and his philosophical concepts must remain an open question. It is, however, not very likely.

Nevertheless, Peirce and Jacob von Uexküll have a great deal in common, as I shall argue. Echoing Peirce’s semiotic idealism, Uexküll states, “As the activity of the mind is the only aspect of nature immediately known to us, its laws are the only ones which may rightly be called laws of nature.” These “only true laws of nature” are the “rules and laws under which the signs and sign processes communicate themselves to our mind.”

Thure von Uexküll does note some differences between his father’s ideas of semiosis and that of Peirce, but he suggests that many of these differences are a result of the different areas of analysis, as Uexküll was studying biological sign processes, and also that Peirce's semiosis is triadic, whereas Uexküll’s is considered as a cyclic process. He suggests that

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…the relation between Peirce's triadic and Uexküll's cyclic model becomes obvious if the former is conceived of as a synchronic system [one that represents a particular point in time], the latter as a model for the discursive stream of sign processes [representing the semiosis occurring as the organism interacts with its Umwelt].

However, it is in the concept of the Umwelt that we find the potential to build on Peircian semiosis to incorporate the ideas of biosemiosis, ecosemiosis and other areas of study that I have mentioned previously into a new epistemology.

The term Umwelt has been widely used and developed in semiotics, anthropology, philosophy and other disciplines. The word was first used in 1800 by the Danish poet Jens Immanuel Baggesen (1764-1826) in a German ode “To Napoleon,” translated as follows:

And floods turn into fire, mist into northern lights,
Rain into radiant outpour, so that to the surrounding world [Umwelt]
The poet's hellish fate appears as an ethereal castle (italics added).

The word is still in contemporary use in German, carrying the meaning of “environment.” In academic English-language usage, however, it carries a meaning based on its use by Uexküll, who used it in the 1920’s as a reference to the phenomenal worlds of organisms. Uexküll also describes reality as manifested in those Umwelten (the plural form), which are “subjective-self-world bubbles,” formed by the semiotic activity of subjects, and which surround all living beings, “clearly delineated but invisible to outside observers.” These “form themselves into a synthesis of all subjects and their subjective self-worlds at the same time undergoing constant changes in harmony with one another.” This is what

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404 Ibid., p.308
407 Cobley, *The Routledge Companion to Semiotics*, p.43
Uexküll privileges as the “ultimate reality” or Natur in German, and rather than a mechanistic, reductive reality that exists apart from experience, or an image of the external world that exists in a separately cognising “mind,” it is a reality revealed through signs, recognising the reality of felt experience.

The Umwelt refers to the world around an animal as it experiences these worlds, with the implication that the animal perceives the world as a semiotic subset — sensing and recognising only those signs that are relevant to its life and activities in the world, just as other species will perceive and process a different set of signs, perhaps overlapping, perhaps disjunct. The organism’s Umwelt is the result of the organism’s particular capacities and capabilities for making, receiving and interpreting signs. This semiotic capability, often exercised without conscious awareness, also enables the organism to “[discern] meaning from environmental cues beyond a purely instinctual reaction,” as can be seen in microorganisms, Homo sapiens, and at all levels of zoological life in between. And, as I shall argue, it can be extended beyond life into other aspects of the biosphere. Simply, the Umwelt is that part of the biosphere or, as we could term it, the semiosphere, that has meaning for the organism. The foundation of this idea has an eminent heritage.

Jonathan Beever and Morten Tønnessen note that Kant’s views were very influential on Uexküll, proposing that the emphasis on subjecthood in Kant’s metaphysics was what led Uexküll “to his depictions of the subjecthood of living animals on which Umwelt-theory is based” and that “Uexküll draws some very basic ontological lessons about the structure and nature of the world from…Kant.” Particularly, they note that there are

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…structural parallels between the metaphysical views of Kant, establishing a noumenal world from which each individual is restricted by his or her phenomenal world of experience, and the biological view of Uexküll, establishing a subjectivist or perspectival world of experience for each individual.\textsuperscript{409}

However, Torsten Rüting suggests that Uexküll’s ideas extended those of Kant in some important areas. He notes that the “concept of the universe as the creation of countless individual Umwelten challenged the idea of one universal objective world,” and although “Uexküll did not deny the existence of a physical world, [he] rejected the claims of its universally equal intersubjective significance and labeled them ‘metaphysical,’” in effect, speculative. And most important for our discussion, he suggests that Uexküll went “beyond Kant in terms of scope as well, [and] pushed the basic model of subjecthood in application to not only rational human beings but also the nonhuman living world.”\textsuperscript{410}

Beever and Tønnessen also suggest that Uexküll’s ideas were, at least to some extent, a reaction against “the age of mechanistic biology” into which Uexküll was born, and that he was “concerned as much with the reductionist biology of his day as [with] the political strife” of the early 20\textsuperscript{th} century in pre-first World War Europe.\textsuperscript{411}

Umwelten, which Kull describes as “general characteristic[s] of all living beings” exist in the vegetative, animal, and cultural realms, each with their own semiotic typology and phaneroscopy (to use Peirce’s term), as follows: Vegetative (capable of recognition, iconic relations, and not bounded by space or time), animal (capable of association, indexical relations, and existing in space, but not time), and cultural (capable of combination, symbolic relations, and specific to space and time). Kull refers to these divisions as “semiotic threshold zones” rather than using Eco’s term “semiotic threshold,” as discussed

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\item \textsuperscript{409} Beever and Tønnessen, “‘Darwin Und Die Englische Moral’: The Moral Consequences of Uexküll’s Umwelt Theory”, p.439
\item \textsuperscript{410} Ibid., p.439
\item \textsuperscript{411} Ibid., p.438
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earlier, as he explains, “the border between life and non-life turns quite fuzzy in principle. This is why we need to speak about threshold zones instead of just thresholds.”

Kull suggests that this typology reflects the classical, Aristotelian distinction between *anima vegetativa*, *anima sensitiva*, and *anima rationale*. Thomas Aquinas explained this as, “in the first stage of embryonic development, the vital principle has merely vegetative powers; then a sensitive soul comes into being, and still later this is replaced by the perfect rational soul.” To expand further on these semiotic threshold zones, we can consider the example of vegetative semiosis — as when a living cell uses a specialised enzyme in its outer membrane to recognise a substance external to itself and to signal its presence to the cytoplasm. This vegetative semiosis is solely iconic because it is limited to recognising (and perhaps transforming) a substance or a source of energy, but it cannot relate the sign to any other. Nevertheless, Kull continues, “it is code-based (thus memory-based that allows similarity to be established) and not a pure stereochemical interaction.”

I have discussed the current dominant reductionist/mechanistic approach to understanding nature as devised, popularised and promoted by Newton and others, and Uexküll provides a clear and well articulated alternative to this view. It is easy to see in Uexküll’s work his contention that, as Buchanan notes, “conventional biology had run its course by treating animals as objects governed by mechanical laws of nature such that they became accessible to the scientific eye of human objectivity.” He clearly discerned the danger that if

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…biology continued to understand animal life with misguided objectivity, it would eventually succumb to the influence of chemistry and physics by seeking...to ground its knowledge in the reductionist accounts of chemico-physical factors.  

Further to the contrast that Uexküll makes between living organisms and machines, Buchanan observes that he

…contrasts the “centripetal architecture” of purely physical things with the “centrifugal architecture” of organisms; the former accounts for how material things are formed by outside forces acting inwardly, whereas with the latter we are led to see how organisms develop from the inside out.

This echoes the morphological perspective of Romantics such as Goethe and Schelling who focus on change, particularly change through processes of growth, and it particularly resonates with Schelling’s analogy of nature as a whirlpool, which I have mentioned earlier (AA I,7 83n). He further elucidates these anti-mechanistic, anti-reductionist assertions:

> Material, nonliving things are created from the outside by parts being put together or taken apart, whereas living, organic beings develop from an inner force that unfolds according to a morphological plan. Living things are always already a completed unity, no matter what stage of development, in a way that objects and machines cannot be. [...] Organisms…are understood as a whole, not by divisible parts.

Uexküll himself says that “it seems that we must abandon our fond belief in an absolute, material world, with its eternal natural laws, and admit that it is the laws of our subject that constitute the world as meaningful.” Thus, meaning in all of the natural world is intimately related to relationships, and all relationships, mediated by semiosis in the Umwelt, have significance to the organism. Buchanan notes with regard to this:

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413 Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.7
414 Ibid., p.7
415 Ibid., pp.14, 15
416 Uexküll, Theoretical Biology, p.89
Such meaning is attributable to how organisms enter into relationships with other things and thus come to see the environment as laced not just with signs, but with significance itself.\footnote{Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.8}

And this “significance,” as the word suggests, has implications of meaning and value and therefore moral connotations, as I shall consider by examining the concepts of model and metaphor as they relate to the Umwelt.

### The Significance of the Umwelt

Hoffmeyer describes the Umwelt as “relevant parts of the environment...internalized as an ‘inside exterior,’ a phenomenal world or perceptual model.”\footnote{Jesper Hoffmeyer, “Surfaces Inside Surfaces. On the Origin of Agency and Life”, Cybernetics & Human Knowing, 5, no. 1 (1998): 33-42, p.33} Thomas Sebeok suggests that the closest equivalent in English is “model.”\footnote{Thomas A Sebeok, Signs: An Introduction to Semiotics (Toronto, ON: University of Toronto Press, 2001), p.75} A description of an Umwelt shows how the organism (via its Innenwelt, or interior world) maps the world, and the meanings of the objects within it. Uexküll uses as an example the snail’s Umwelt, with the shell’s characteristic as a place to dwell versus its different characteristic in the hermit crab’s Umwelt. The shell is discarded by the snail, and then acquired by the hermit crab. It has therefore become a place to live for both of these organisms. The characteristic of the shell as a home is different for each (grown by the snail, found by the crab, for example), but in an adaptation by one of nature’s compositions — using a musical analogy to which I shall return later — it is able to be used by both, because they share the same
meaning. Meaning in nature’s “score” takes the place of harmony in a musical score by acting as a connecting link or bridge.

Kull suggests that a “[d]escription of somebody’s Umwelt will mean the demonstration of how the organism (via its Innenwelt) maps the world, and what, for that organism, the meanings of the objects are within it. Therefore, semiosic systems are simultaneously modelling systems,” which includes systems of culture and organic systems. Thus, modelling systems are semiotic systems and the Umwelt is a model. The Umwelt is what enables the organism and the species to survive, as although signs may be overlooked or misinterpreted, and may provide an inadequate representation of reality — just as any model does not possess all the characteristics of what it represents — if an Umwelt did not provide a pragmatic representation of reality, then that species would not survive.

Kull refers to Myrdene Anderson and Floyd Merrell, who argue that “semiotics can be thought of as a ‘modeling of modeling’” and that, while every species may misinterpret or overlook the signs within their Umwelt, or the signs that are well discerned do not give a complete representations of what the species needs to understand, Kull notes that “the testimony that an Umwelt is a fairly good guide to reality is offered by the survival of the species within a given Umwelt.”

These “relevant parts of the environment” obviously include other living beings as well as non-living elements of the Umwelt, as Uexküll writes, “In this way we get the impression of a comprehensive harmonic totality, because the properties of lifeless things

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422 Cobley, The Routledge Companion to Semiotics, p.43
423 Ibid., p.428
424 Kull, "Umwelt and Modeling", p.4
also intervene contrapuntally in the design of living things,”⁴²⁵ and “the conformity with plan of life embraces both inorganic and organic forces.”⁴²⁶ As these form part of the Umwelt, they are all significant to the organism. As Buchanan adds:

Uexküll not only emphasizes the role of lifeless things — including any physical and material thing such as a spider’s web or any artificial product — but, just as important, inorganic forces — such as affects, temperatures, shadows, or noises. The forces that derive from inorganic things play a constitutive role in the formation of an organism and its Umwelt, and are just as essential to the organism as are material, physical things, whether they are organic or not.⁴²⁷

But let us also examine the concept of endosemiotics to provide understanding of how an organism’s internal systems are able to communicate with its external ecosystem, therefore showing more evidence of the pervasiveness of semiosis.

Endosemiotics is the term that Thure von Uexküll, Werner Geigges and Jörg Herrmann use to describe the study of the body’s vast internal systems of non-linguistic, non-mentalistic signs. In animals and humans, the scale and complexity of this interaction is vast, involving trillions of cells, many interacting systems, each with different cogent signs, reception and interpreting mechanisms, which need to work together to accomplish reflexive, agentic and autonomic activities.⁴²⁸ Applications of endosemiosis include the study of immunological organisation and cell signalling.⁴²⁹ Interestingly for our consideration of the importance of models, Thure von Uexküll et al. observe that all endosemiotic sign processes are indirectly linked to phenomena in the organism’s environment. As an

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⁴²⁶ Uexküll, *Theoretical Biology*, p.354
⁴²⁷ Buchanan, *Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze*, p.49
⁴²⁹ Ibid., p.44
example of an internal model, constructed semiotically, they suggest immune systems which contain “lists” of potential antigens. Additionally, they suggest that “programs for the construction of subjective ‘phenomenal worlds’ are stored in the central nervous systems of higher living beings containing all details essential to the orientation of motor activity.”  

These phenomenal worlds are the Umwelten of Uexküll, and the nervous system model is used by and provides feedback to the systems that support movement, particularly the muscular-skeletal system. Uexküll termed these Umwelt-programs stored in the organism “counter-world” or “inner world” (Gegenwelt and Innenwelt as mentioned previously). Thure von Uexküll et al. refer to these “inner worlds” as containing templates, which are patterns or stencils that model or anticipate what is to be produced — in fact, a type of model, as in the contrapuntal relationship between spider and fly, through the spider’s web, as I will discuss in more detail later. These templates mirror the Umwelt, the sectors of the environment that are significant to the living organism, and are encoded in signs that form the semiotic exchange between cells and between organs. If a sign needs to be exchanged between the organism and the environment, these endosemiotic signs require translation into the endosemiotic system of the other, which implies that the organism’s internal models must contain some representation of the other. This translation into human terms, for example, could include psychological and social sign systems, such as ideologies, which may be classed as “exosemiotic” systems, the sign interchange between organisms.

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431 Favareau, Essential Readings in Biosemiotics: Anthology and Commentary, p.284
Shedding further light on this idea is Brier’s concept of a signification sphere, a close equivalent to Uexküll’s Umwelt. Brier describes the signification sphere as “a workable model of nature for a living system” and it exists at an individual level until is is disturbed by social interactions such as mating, competition, cooperation and hierarchy.\footnote{Brier, "The Cybersemiotic Model of Communication: An Evolutionary Model of the Threshold Between Semiosis and Informational Exchange", p.276ff} The need for exosemiosis therefore arises and, according to Brier, exosemiosis consists, at least in humans, of a hierarchy of biosemiotic sign games — at the level of basic biological drives, cybernetic language — through signals of orientation and other reflexes, and socio-communicative auto-poietic language games. The Umwelt is, as Deely suggests, \footnote{Deely, Basics of Semiotics, p.197}

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\text{…in itself, perceptual through and through according to the species-specific constraints of a biological inheritance, [and it is] modified and restructured from within by further objective relations not themselves constrained directly by the biological heritage.} \footnote{Uexküll, "Introduction: The Sign Theory of Jacob Von Uexküll", p.282}
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Let us now consider the metaphor used by Uexküll to further assist with our felt understanding of the concept of the Umwelt.

Musical Metaphors

Uexküll uses a compelling metaphor to elucidate his anti-mechanistic and holistic view of nature and suggests that,

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\text{Nature may be compared to a composer who listens to his own works played on an instrument of his own construction. This results in a strangely reciprocal relationship between nature, which has created man, and man, who not only in his art and science, but also in his experiential universe, has created nature. [..] The formula of the reciprocal relationship between man, who must, in his self-world, create nature, and nature, which has brought forth the human species, requires us to consider the relationship between sign processes in nature and in language.} \footnote{Uexküll, "Introduction: The Sign Theory of Jacob Von Uexküll", p.282}
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As Uexküll delves into the details of this metaphor, he becomes more explicitly anti-mechanistic:

It is not enough to consider that musical instruments merely produce air-waves, as the mechanists do. One cannot create a melody or a harmony with air-waves; neither can one compose a score with them. Only the relationship between the air-waves and the human ear that transforms air-waves into tones makes it possible to produce melodies and harmonies and to write scores.  

Concerning the process of the evolution of life, Uexküll suggests that instead of a random struggle for existence, “a melody prevailed, embracing both life and death.” Grosz notes that Uexküll argues that Darwinian natural selection explains how the “less fit” are eliminated, but that Darwin does not explain the privileging of life forms that are more fit, and that it is musical and not mechanical laws that we need to study if we are to understand the “laws of Life,” as it is the tune which the organism plays and which its Umwelt composes, that survives or suffers extinction.

Uexküll also uses the Umwelt to shed light on the natural process of evolution by noting that the complexity of Umwelten has grown through the incorporation of signification as meaning. A meaning-carrier always has a corresponding meaning-receiver, thereby, for example, connecting changing organs to a changing need for those organs, connecting predator and prey, connecting male and female in what Cobley calls “astonishing variations” in forms of sexual reproduction. This exposition of evolution is vastly different from that of Darwin and his heirs. As Cobley explains,

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435 Uexküll, “The Theory of Meaning”, p.63
436 Ibid.
In every case an advance occurred, but never progress in the sense of the survival of the fittest; never selection of the superior one, through an unplanned, furious struggle for existence. Instead a melody prevailed, embracing both life and death. 438

The development of this melody fits well with Peirce’s assertion, mentioned previously, that nature has a tendency to “take on habits” or to develop regularity and patterns, particularly in Peircian “agapastic” development. This musical metaphor is further developed by other thinkers.

Buchanan439 provides the following interpretation of Uexküll’s musical metaphor with biological equivalents, and we can note how the musical metaphor supports Peirce’s synechistic concept of life from cell to ecosystem: First, cellular activity provides a basic tone or rhythm of cells. This allows us to see cells as “subjects in their own right,” as Uexküll writes: “The ego-qualities of these living bells made of nerve cells communicate with each other by means of rhythms and melodies: It is these melodies and rhythms that are made to resound in the Umwelt.”

Second, organs provide a melody, a more complex combination of tone and rhythm. Uexküll proposes: “The chime of the single-cell stage, which consisted of a disorderly ringing of single-cell bells, suddenly rings according to a uniform melody.” Third, melodies from the functions of organs and the rhythms and tones from the cells combine to produce the symphony of the organism: “[T]he subject is progressively differentiated from cell-quality, through the melody of an organ to the symphony of the organism.” 440

Now we can consider, as a fourth component, the “music” produced by the relationship between organisms. Buchanan suggests this can be considered as harmony, which

438 Kull, "Umwelt and Modeling", p.469
439 Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.39
440 Uexküll, "The Theory of Meaning"
in music is a combination of notes that share common characteristics such that their simultaneous expression produces a pleasant sound: “Harmony begins with at least two different living organisms acting in relation with one another, but harmony can also extend to a collective whole, such as a colony, swarm, herd, or pack.”

Buchanan cites Uexküll’s example of the “contrapuntal duet that forms a harmony between two organisms.” As Uexküll states:

We see here [in pairs] the first comprehensive musical laws of nature. All living beings have their origin in a duet. The male-female duet is a theme that is interwoven in a thousand variations into the orchestration of the living world. Often the duet is enlarged to a trio, when a third party is needed to bring about the male-female union. We know the role of insects in aiding the pollination of flowers.\footnote{Uexküll, “The New Concept of Umwelt: A Link Between Science and the Humanities”}

And in a further enlargement of the number of “voices” in the musical concord he continues:

The harmony of performances is most clearly visible in the colonies of ants and honeybees. Here we have completely independent individuals that keep up the life of the colony through the harmony of the individual performances.\footnote{Ibid.}

Drawing on the musical metaphor when describing the importance of the Umwelt in the relations the organisms have between each other and with the objects in their experience of the world, Uexküll describes these relationships as contrapuntal, which refers to voices that blend harmonically or “polyphonically” but which follow independent rhythms and contours of pitch. He beautifully describes the variety of life that has emerged from this harmony, as follows:

The properties of the animal and the properties of its fellow actors harmonize in every case like point and counterpoint of a polyphonic choir. It was as if the same master's
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hand had from time immemorial been gliding over the keys of life. One composition followed the next without end — some of them difficult, some easy, some splendid, some dreadful.443

Interestingly, this aspect of the metaphor echoes the idea of the polyphonic narrative discussed by Gare as a way to better understand the place of humans in the rest of nature, an idea to which I shall return later in this discussion.444

In a further discussion of this contrapuntal relationship between species, and between living beings and inanimate aspects of the world, Uexküll quotes Goethe:

If the eye were not sun-like,  
It could never behold the sun.  
If the sun were not eye-like,  
It could not shine in any sky.445

He goes on to provide examples such as the spider’s web and its contrapuntal relationship with the fly. He suggests that the spider's web is formed in a “fly-like” manner, because the spider itself is “fly-like.” This means that the body structure of a spider has taken on certain of a fly’s characteristics. Thus, the fly’s “body structure has adopted certain themes from the fly's melody…[and t]he counterpoint represents the theme in the structure.” In a more mundane example, but one that demonstrates this “counterpoint” in human culture, Uexküll refers to the handle of a coffee-cup as demonstrating the contrapuntal relationship of the coffee and the human hand and notes that the counterpoints are the main influences on the themes for making the cup.446

443 Uexküll, “The Theory of Meaning”, p.69  
444 Arran Gare, Postmodernism and the Environmental Crisis (New York, NY: Routledge, 1995), p.140  
445 Uexküll, “The Theory of Meaning”, p.66  
446 Ibid., p.66
Finally, as a fifth aspect of the musical analogy, we can consider nature itself as a composer. As Uexküll observes,

The composer of a symphony is not limited in the choice of instruments he may use in his composition, nor is nature: she is completely free in her choice of animals to join in counterpoint, [although] the expression ‘a theory of the composition of nature’ may be misleading. By such a theory is only meant a generalization of the rules that we believe we have discovered in the study of the composition of nature.

However, he does provide a striking overview of this composition:

We now know that our sun in our sky and our garden, full of flowers, animals, and people, are but symbols of an all-encompassing symphony or composition of nature, which ranks all things according to their significance and meaning (italics added).\footnote{Ibid., p.78}

But what of our own place in this symphony, and how does this help us to feel and understand our own connections to the rest of the natural world through our own Umwelt?
Chapter 10: Semiosis as Shared Language

Here I consider the value of semiosis when understood as a language shared with the rest of the natural community. In this chapter I argue that this concept helps to build empathy with all the inhabitants of the semiosphere, as I argue that an appreciation of semiosis as a shared language helps us to live a shared experience of the natural world with all of its inhabitants.

Our Voice in the Song of the Umwelten

IN AN APT SUMMARY of the implications of this musical analogy for our own place in the world, Uexküll argues that we should see ourselves as a voice in one of nature’s compositions, where we recognise our unique contribution as humans, but always acknowledge the constraints that this places upon us as well:

I am a part of nature to the extent that she has integrated me into one of her compositions. I am not a product of all of nature, but only a product of human nature, beyond which I have not been granted the powers to perceive. Just as the tick is only a product of tick nature, the human being is tied to his human nature, from which every individual human being begins anew.\footnote{\textit{Ibid.}, p.77}

However, as much as it provides a wonderful insight into the subjective world of organisms, and the importance of relationships between all subjects and elements of the biosphere, the concept of the Umwelt needs to be considered in light of its own connections — in fact, entanglements — with other semiotic concepts.

\footnote{\textit{Ibid.}, p.77}
For example, when Deely discusses the particular role of humans and the relationship between the environment, Umwelt and the Lebenswelt, which he defines as “the species-specifically human version of the generically animal Umwelt,” he uses the term “semiotic entanglement,” which he defines as when “one object cannot be fully described without considering the other(s).” He goes on to explain,

[T]he subjective environment is not the Umwelt. The subjective environment is rather that upon which the Umwelt depends, namely, the ‘Innenwelt,’ or animal modeling system on the basis of which the animal, human or not, interprets its awareness of physical surroundings.  

And if we are to consider transforming our own understanding of our relationship with the rest of the natural world, this is an important consideration.

With regard to past radical transformations in our understanding of nature, he points out that,

It was not the combined discoveries of Copernicus and Galileo that caused the earth to revolve about the sun. Those discoveries merely forced the human animals to become “aware of the fact” that it is not the sun that moves relative to the earth, as appears in the experience of all animals with eyes to see, but rather the earth which is doing the revolving.

And as Buchanan observes of Uexküll’s Umwelt theory,

Reality is created through the experiences of each and every subject, and this, as we shall see, holds for all animals just as much as it does for humans. [Uexküll is very successful in transforming] our understanding of the animal away from its traditional interpretation as a soulless machine, vacuous object, or dispassionate brute. Against such positions, Uexküll proposes to understand the “life story” of each animal according to its own perceptions and actions.

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450 Ibid., p.12
Uexküll describes the impact of this on the one who studies the organism:

[H]e will address himself to animals not merely as objects but also as subjects, whose essential activities consist in perception and production of effects. But then, one has discovered the gateway to the environments, for everything a subject perceives belongs to its perception world [Merkwelt], and everything it produces, to its effect world [Wirkwelt]. These two worlds, of perception and production of effects, form one closed unit, the environment [or “Umwelt”].

The German verbs *merken* and *werken* mean, respectively, to notice and to work, and the noun *Welt* is world. Thus, the Merkwelt is the way that the organism “notices” or views the world, and Werkwelt, its domain of capability and activity. And this can lead to a new approach to the study of the natural world; a new methodology based on the concept of the Umwelt.

We need, therefore, to delve deeper into the semiotic structures of all of the natural world, and this needs to include, as I have discussed, at least biosemiotics, zoosemiotics, ecosemiotics. And Umwelt theory can form the basis of a methodology for examining the relationships between the environment and behaviour. This further application of semiotics can take this towards a reunification of all that which dualism divides and show dualism for what it is: Merely a widely accepted, mainly unquestioned idea about nature and our place within it, and an idea that by no means reflects the reality of the relationship we have with the rest of the natural world. Semiotics in nature highlights similarities between humans as the rest of the natural world, even more than it allows us to appreciate differences. As Beever and Tønnessen assert:

> Taken seriously as an approach to understanding both non-human and human communication… Zoosemiotics (the study of semiosis in nonhuman animals) and biosemiotics (the study of semiosis in all living systems) draws close the relationship of human and non-human species in terms of semiosis, offering further evidence that the unsurpassed

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place historically prescribed to the nature of the human animal is not inherently unsur-
passed.453

With regard to the animal semiotic (or zoosemiotic) threshold zone, Kull suggests that this is “where the ability for associative learning arises, [as i]t obviously requires either a central nervous system or an immune system that can recode the relation between sen-
sory and motor organs according to the correlations learned.”454 As Paul Bains notes, this brings a spatial element to the relationship, as

…[a]nimals communicate and are aware of their surroundings, but not of their surround-
ings as surroundings, of their Umwelt as an Umwelt or objective world grasped as a whole in relation to itself, which requires a distinction of objects from things and rela-
tions from both.455

There is a major difference as we move to the cultural threshold zone as we, as humans, are aware of our Umwelt as an Umwelt, and Bains suggests that “this awareness transforms the Umwelt into a Welt, or […] using Husserl’s term — into a Lebenswelt,” and thus,

…human beings by distinguishing things [something that is immediately perceived] from objects [something of which we are aware, but may not be physically present] (and the relations from both) within anthroposemiosis, can use the relations to create the systems of communication we call languages.456

This also adds a temporal dimension to the spatial dimension of the zoosemiotic threshold zone, as Kull continues that “with the appearance of language [comes] the cre-
ation of time — of a temporal Umwelt with its distinctive past and future together with an ability for chronesthesia, or mental time travel.” Language and temporal awareness provides a further implication, as ”this corresponds to the emergence of new types of

453 Beever and Tønnessen, "Darwin Und Die Englische Moral": The Moral Consequences of Uexküll’s Umwelt Theory", p.439
454 Kull, "Vegetative, Animal, and Cultural Semiosis: The Semiotic Threshold Zones", p.21
456 Ibid., p.159
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memory in humans that is necessary for...building narratives," a topic to which I shall return later as I examine narrative in the human and the non-human realms.

A group of humans would also share a common signification sphere of culture, and surely in non-human animals with strong social structures we can recognise a similarly shared signification sphere. In addition, it is important to recognise that, just like any other organism, our perception of nature is that of our own Umwelt. As Wheeler notes, “the human sensorium, although tremendously ‘message’, or better, ‘semiosis’, rich, is still limited to its own Umwelt, which understands things semiotically, but not only in articulate language.” That perception also involves the tendency to classify and to make use of nature, just as any organism tends to do of its own Umwelt. We not only carry endo-semantic models of our Umwelt but we create our own culturally-specific models in nature itself. We build gardens and parks that are abstracted representations of natural features, constrained and constructed according to aesthetic cultural traditions.

Thus, Peirce’s synechism, helping us to understand our unity with the rest of the natural world, also helps us to see how we can recognise and appreciate our difference in a way that does not lead to exploitation and ruination. But, just as we can discern semiosis as common to all agentic and subjective beings, let us first consider whether the communicative aspect of semiosis could be seen as the identification of a language that we share with the rest of nature, and whether this could contribute to our felt reunification with the natural world.

Community Through Shared Language

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457 Kull, "Vegetative, Animal, and Cultural Semiosis: The Semiotic Threshold Zones", p.22
458 Wheeler, The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture, p.23
Considering again the Romantic period, this was characterised by the understanding that complex wholes (organisms, for example, but also human societies and their natural and historical contexts) are not to be understood reductively but holistically, and that real knowledge is not merely objective, abstract, propositional knowledge, but is also deeply experiential. Abram articulates this beautifully:

> For the largest part of our species' existence, humans have negotiated relationships with every aspect of the sensuous surroundings, exchanging possibilities with every flapping form, with each textured surface and shivering entity that we happened to focus upon. All could speak, articulating in gesture and whistle and sigh a shifting web of meanings that we felt on our skin or inhaled through our nostrils or focused with our listening ears, and to which we replied — whether with sounds, or through movements, or minute shifts of mood.

However, the concept of a communicative nature predates the Romantic period. Nöth discerns three historical conceptions of a communicative, semiotic relationship between humans and their environment as the Pansemiotic, the Magical, and the Mythological. In the Pansemiotic, the signs which we perceive in our natural environment are messages emitted by God or some other supernatural power. The Magical conception of environment semiosis suggests that natural phenomena are messages originating from a human magician, and received by the natural environment. As I shall argue, though, semiosis enables us to find a language in common with all of the natural world.

The following words were penned by 18th Century German poet G C Tobler in a piece of prose titled “Die Natur” (Nature) after a visit to the polymath Johann Wolfgang von Goethe in 1781:

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460 Wheeler, *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture*, p.43
462 Nöth, “Ecosemiotics”, p.334
Natur! ... Wir leben mitten in ihr, und sind ihr fremde. Sie spricht unaufhörlich mit uns, und verrät uns ihr Geheimnis nicht.\textsuperscript{463}

The passage may be translated as: “Nature! ... We live in the midst of her, and she is a stranger to us. She speaks constantly with us, and does not reveal her secret to us.” The concept of communicative, “speaking” nature was a core belief of Romanticism, and Schelling, who had a huge influence on Peirce, also expressed this view. However, as Kull points out, despite two hundred years of scientific enquiry, our alienation from nature has increased, and “[e]ither we have not achieved the ability to communicate with her, or that has been a pathological communication.”\textsuperscript{464} But, as I have mentioned, this “pathology” is not only a problem, but also an opportunity to repair communication.

There are many ways that the consideration of semiosis can assist with the development of an ecological civilisation. As I have discussed earlier,

this can enable us to better examine how human culture and ecosystems interact.

Bruni agrees:

Besides being potentially able to help to refine our mapping techniques of biological processes, a biosemiotic approach to ecology, if carried out further, may serve to better integrate our understanding and monitoring of ecosystems into the cultural process of searching for (human) sustainability.\textsuperscript{465}

It does this, as Wheeler states, as it “seeks to provide a language for talking about the ‘language’ that not only permeates all life but, arguably, is the identifying feature of life itself.”\textsuperscript{466} However, rather than just providing a “tool” for us to use, I argue that the main

\textsuperscript{463} Quoted in Kull, “Semiotic Ecology: Different Natures in the Semiosphere”
\textsuperscript{464} Ibid., p.344
\textsuperscript{465} Bruni, “Biosemiotics and Ecological Monitoring”, p.303
\textsuperscript{466} Wheeler, The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture, p.120
way that a consideration of biosemiosis could provide us with greater insight and understanding of our place in the rest of nature, as a driver towards understanding and achieving a sense of unity and empathy with the rest of the biosphere through a common language. Hoffmeyer suggests that this can be cast as “semiotic freedom” and elucidates it as follows: “The most pronounced feature of organic evolution is not the creation of a multiplicity of amazing morphological structures, but the general expansion of ‘semiotic freedom’, that is to say the increase in richness or ‘depth’ of meaning that can be communicated.”467 Thus, the perspectives of the other ‘citizens’ of the semiosphere can be understood and considered with greater understanding.

Recognising the mutual dependance of the “citizens” in the biosphere he allows that “if we imagine a model of a semiotic space where all the languages emerge into existence at one and the same moment, we ‘still would not have a single coding structure but a set of connected but different systems.”468 A view of “connected but different systems” helps us to overcome the dualistic view that pervades our understanding of nature. As I have argued, a semiotic approach to studying nature can change not only our methods of study but also our feelings about the rest of nature and our place in it. Mathews discusses how a semiotic view of life can help us to build connection and empathy with the rest of nature.

She argues that “subjects signal their presence directly to one another by way of communicative exchanges” and suggests that understanding this changes our view of other living beings. For example, when we read an account of the methods by which moray eels and coral groupers communicate by means of gestures in order to arrange

467 Hoffmeyer, Signs of Meaning in the Universe, p.61
cooperative hunting expeditions, we tend to react with admiration and surprise and seem more likely to attribute intelligence and agency to these fish.\(^{469}\) As Mathews argues,

> When a subject looks at appearances merely as appearances, then it cannot know if there really is anything out there, anything lying on the “other side” of the appearances. But when signals, or messages, are included in the appearances, then the subject can be confident that something is indeed out there, and the something in question is a subject with meanings of its own and an intention to convey them.\(^{470}\)

Although the use of natural language by humans is very different to the forms of communication used by other animals, as Sebeok notes,

> …this does not mean, however, that there will not be similarities in the neural processing mechanisms or mental processes between humans and other animals. In fact, the communication that exists between humans and other species indicates that there is some “code sharing” happening between the species.\(^{471}\)

This is a reflection of Peirce’s semiotic idealism, which I have identified as “the thesis that whatever there is depends upon representation and interpretation, upon the activities of mind constituting semeiosis, for its existence,”\(^{472}\) and Charles Hartshorne, an editor of Peirce’s collected papers, uses the example of bird song and notes that “considering the enormous gap between the anatomies and lives of man and bird, it remains astonishing how much musical intelligibility the utterances of the latter have for the former.”\(^{473}\) As Sebock continues, a semiotic consideration of life enables us to “[enlarge] the biological

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\(^{470}\) Mathews, For Love of Matter: A Contemporary Panpsychism, p.41

\(^{471}\) Sebeok, "Zoosemiotic Components of Human Communication", p.223

\(^{472}\) Parker, "Peirce’s Semeiotic and Ontology", p.65

\(^{473}\) Charles Hartshorne, Born to Sing: An Interpretation and World Survey of Bird Song (Indianapolis, IN: Indiana University Press, 1992).
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base as against the cultural superstructure, and this brings us as humans closer to the rest of the inhabitants of the biosphere.

With respect to a common language, this is an important concept as it enables us to conceive of communication with others in the biosphere, thus recognising their own subjectivity, and building not only understanding but empathy, a reflection of Peircian Firstness upon which ethics and rationality are based. As Merrell, after Yuri Lotman, suggests, “the biosemiosphere is marked by ‘hetero-geneity,'” and he indicates that this is because there are a multitude of communicative “languages,” which “relate to each other along the spectrum which runs from complete mutual translatability to just as complete mutual untranslatability.” Thus, some may be understood easily, others need deep study, and still others remain always hidden.

It is interesting, too, to note that a great deal of encoding and decoding of messages between humans happens at an unconscious level that might well be described as instinctual, a well formed example of the zoosemiotic within the anthroposemiotic. For example, the pupil response is evidently a signal of degree of attraction between the sexes. As Eckhardt Hess explains:

While it is evident that men are attracted to women with large pupils their responses are generally at a non-verbal level. [The enlarged pupils] imply a strong and sexually toned interest in the man she is with...The enlarged pupils, in effect act as a 'signal' transmitted to the other person...apparently without conscious awareness.

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474 Sebeok, "Zoosemiotic Components of Human Communication", p.226
However, although the dilation and response are normally unconsciously coded and interpreted, a cultural anthroposemiotic “layer” can be imposed on this zoosemiotic attribute: Local application of a crystalline alkaloid derived from the belladonna plant will trigger the dilation, and hopefully the desired, unconscious response — a cultural practice used since the middle ages, and the plant itself apparently named after the resultant beauty seen in the eye of the one who is beheld.476

Uncovering and understanding these occult semiotic processes as they occur in the anthroposemiotic and zoosemiotic realms, and particularly as they operate between the two, has great potential for understanding and perhaps repairing the current dissonance in the melody of existence between the human and non-human living realms. Sebeok, in a discussion about testing human to animal communication expressed it this way:

If we know precisely by what means we communicate our expectancies to our animal and human [experimental] subjects, we could institute more effective controls against the effect of our expectancies. More generally, if we know more about the modalities by which we subtly and unintentionally influence one another, we would then have learned a great deal that is new about human social behaviour.477

Wheeler points to the communicative value of semiosis in the study of living organisms when she states that “literary and cultural studies come together with the biological sciences in the new cultural studies development of ecocriticism,” and she suggests that “the development of biosemiotics might be understood, itself, as an “ecocritical” de-
opment, and as a way of providing a unified, or integrated, field in which something previously understood as the preserve of humans alone (semiosis) was actually a feature of all living things."\(^{478}\) Wheeler continues in this theme, citing Raymond Williams:

“All living forms have communication systems of a kind, but again, in man, the process of learning and relearning, which is made possible by social organisation and tradition, has led to a number of communication systems of great complexity and power. Gesture, language, music, mathematics are all systems of this kind. […] At one level we can oppose art to science, or emotion to reason, yet the activities described by these names are in fact deeply related parts of the whole human process….the consciousness is part of the reality, and the reality is part of the consciousness, in the whole process of our living organisation.”\(^{479}\)

And, as Wheeler notes:

[A]rticulate language [is] the most recently evolved expression of a semiosis which informs all nature. In this, the semiotic nature of human beings will prove central — both in drawing attention to the fundamental nature of their sociality, and in showing its evolutionary and ontological dependence upon natural and cultural environments.\(^{480}\)

In line with our assertion that a semiotic view of the natural world helps to unite us and to enable communication with nature to be seen as central to our relationship with it, Wheeler also suggests that

…ecosemiotics, which, again, and like its relative biosemiotics, is concerned with producing an integrated account of the biosphere (or semiosphere) in which humans, and human language and culture, are not seen as fundamentally different from the rest of the world, but where the idea of semiosis is found to be common to all life.\(^{481}\)

And Wheeler cites Sebeok who, in line with Peirce, suggests that “[a] definition of life is very probably simply that which is semiotic.” Wheeler describes biosemiotics as “a new conceptual framework” which “bring[s] together mind, body and environment [and]
which moves beyond what Kalevi Kull has described as ‘the metaphysical idea that cells and organisms are simply organised organic molecules.’\textsuperscript{482} Wheeler suggests that this will

\ldots not only \ldots help us to think about the coupled relationship between individuals and their environments in ways which emphasise human sociality, it may also help us to begin to think about human natural and cultural environments more widely.\textsuperscript{483}

That semiosis may provide a common language across disciplines and cultures is supported by Cobley’s assertion, again after Sebeok, that “the boundaries between [semiotics of culture and biosemiotics] are already crumbling, giving way to a unified doctrine of signs embedded in a vast, comprehensive life science.”\textsuperscript{484} Bruni refers to the “semiotic networks of organisms covering the totality of the surface of the Earth and thus giving rise to an autonomous sphere of communication,” as the semiosphere, which, after Hoffmeyer, “includes both biosemiosis and anthroposemiosis [and] is a sphere like the atmosphere, the hydro-sphere or the biosphere.” These interpenetrating spheres are rich with signs, and this semiosis takes place through many mediums, including sounds, odours, colours, movements and gestures, variations in chemistry, and more.\textsuperscript{485} As Wheeler concludes:

Our senses of ourselves, and the extent to which we flourish, are not located primarily in our intrinsic individual selves and capacities, as the philosophy of individualism supposes; on the contrary, they derive from the richness of our social connectedness.\textsuperscript{486}

Wheeler suggests we think of this “in terms of what Hoffmeyer calls ‘semiotic freedom’” and offers that

\begin{footnotesize}
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  \item \textsuperscript{482} Ibid., pp.110
  \item \textsuperscript{483} Ibid., pp.110
  \item \textsuperscript{484} Cobley, \textit{The Routledge Companion to Semiotics}, p.55
  \item \textsuperscript{485} Bruni, “Biosemiotics and Ecological Monitoring”, p.303
  \item \textsuperscript{486} Wheeler, \textit{The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture}, p.109
\end{itemize}
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...since...semiosis is the most fundamental indicator of life (biosemiotics), we can think of a flourishing human life in the same way (although not the same degree) that we think about any kind of animal or vegetative flourishing. For humans, who live in a biosphere which is also a highly articulated semiosphere, maximal flourishing consists in the richness of our semiosis: our contacts, our ability to be heard and responded to, our sense of being supported and effective in a rich number of ways.\footnote{Wheeler, The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture, p.109}

This describes a strong sense of community, as we might expect from a group that has a shared language, and Tim Jackson, in *Prosperity Without Growth*, which examines how economics can be redefined for “a finite planet,” suggests that “economists have to be able to answer the question of how a continually growing economic system can fit within a finite ecological system” and he describes this as a search for a common narrative.\footnote{Tim Jackson, Prosperity Without Growth: Economics for a Finite Planet (London: Earthscan, 2009), p.14} To develop this idea further, I later propose that this common language may be able to be used to create a shared but polyphonic narrative, as a means by which all of nature can have a “voice” that is heard and heeded by humanity.

But how can we ensure that such a new approach incorporates a rationality that includes Peircian Firstness and recognises the importance of experience in understanding the natural world? I argue that this is through acknowledging the importance of experience in our interactions — interactions that form our relationship — with the rest of the natural world, and that enable us to feel a deep connection with it.

Chapter 11: Reconnection Through Experience

Our alienation from the rest of nature as the result of the institutionalisation of dualism is not only the cause of an epistemological crisis, but also leads to a felt disconnection from the rest of the world, and often from other humans. I argue in this chapter that the felt experience of being a part of nature is just as important in solving these problems as a purely “rational” approach, and I provide an example of a culture that seems to experience this connectedness. I also suggest that an appreciation of the vital role of semiosis in nature enables us to empathetically experience the significance of other semiotic beings, and to see ourselves in social relations with them as members of communities. Failure to do so will continue the disconnection we feel from the natural world, which I here liken to a form of autism.

The Feeling of Disconnection

OUR DISCONNECTION FROM NATURE, largely a consequence of the tacit acceptance of Cartesian dualism, strikes at the foundation of what it is to be human. A different experience of humanity has been understood through most of humanity’s history, and is still appreciated in some cultures. Alexander, in reference to the conceptions of humanity’s relationship with nature that I have discussed, articulates this impact of this disconnection on our relationships with the rest of nature as follow:

The relation between a person, and the living structure in the world, is an actual and tangible relationship of the kind that we have not yet grasped. The essence common in all these cases, is that people really saw all of nature as a single embracing whole, of which they were a part. Their sacred relationship to this whole was the foundation of their lives.
It hinged on the awareness that they and it are not separate, cannot be separate, are two halves of a single whole.\textsuperscript{489}

We have looked at Alexander’s comments in the context of “wholeness” in aesthetics, but I will now focus on the impact of this division as it applied to our feeling of connection with nature. And with regard to the difficulty of correcting an erroneous view of the wholeness of the natural world, Bateson notes that,

…it is exceedingly difficult to get rid of the error [of dualism, you find] that it’s sticky. It is as if you had touched honey. As with honey, the falsification gets around; and each thing you try to wipe it off on gets sticky, and your hands still remain sticky…You cannot control it.\textsuperscript{490}

Fred Magdoff agrees with the need for fundamental change, saying that, “[The] overwhelming environmental problems facing the world and its people will not be effectively dealt with until we institute another way for humans to interact with nature.”\textsuperscript{491}

Note that Madoff does not mention understanding, but rather the way of interaction with nature as necessary for change; the interaction, though, is based on our understanding. And Bateson refers to our distorted epistemology as “Insanity, [which] after all, takes psychotherapy to change it, or some very great new experience. Just one experience which ends in the laboratory is insufficient.” And one of the reasons for this is that “[e]pistemological error is often reinforced and therefore self-validating. You can get along all right in spite of the fact that you entertain at rather deep levels of the mind premises which are simply false.”\textsuperscript{492} Bateson suggests that psychotherapy — what the patient of one of

\textsuperscript{490} Bateson, Steps to An Ecology of Mind, p.484
\textsuperscript{491} Fred Magdoff and John Bellamy Foster, "What Every Environmentalist Needs to Know About Capitalism", Monthly Review, 61, no. 10 (2010): 1-30, pp.7, 26
\textsuperscript{492} Bateson, Steps to An Ecology of Mind, pp.498-500
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Freud’s associates called “the talking cure”\textsuperscript{493} — or “some very great new experience” is needed to combat an epistemological error. In an article about the construction and reconstruction of narratives in psychotherapy, J. M. Coetzee and Arabella Kurtz make application of this to historical revisioning in societies, particularly in Australia with regard to the treatment of aboriginal people. They ask, “When a society (but for a few dissident members) decides that it does not feel troubled, how can healing even begin? (Italics added)\textsuperscript{494}

As Markley and Harman suggest,

\begin{quote}
The kinds of educational systems and goals a society sets up, the ways in which it approaches the problems of material distribution (poverty and wealth), how it treats the welfare of its citizens, the priorities it gives to various human needs — all these aspects and many more are affected by the image of humankind that dominates the society\textsuperscript{495} and that an exploitation ethic, both of other humans and rest of the natural world, is more easily fostered if “we see ourselves as separate from or superior to nature.”\textsuperscript{496} A focus on the acquisition of material possessions as the primary means to pursue happiness, rather than on achievements, experiences and relationships, has contributed to loneliness, which leads to “reduced self-regulation, increased alcohol and drug consumption, sleep deprivation, stress, high blood pressure, depression, and a host of other health problems, and even premature death.”\textsuperscript{497} And as Natalie Clark \textit{et al.} have found, there is evidence that “mental health is negatively affected by awareness of environmental degradation,” even if
\end{quote}

\textsuperscript{495} Markley and Harman, \textit{Changing Images of Man}, p.1
\textsuperscript{496} Ibid., p.1
\textsuperscript{497} Pieters, “Bidirectional Dynamics of Materialism and Loneliness: Not Just a Vicious Cycle”, p.615
the person is not immediately impacted by the problem, or working in an area that connects them closely to the land.\footnote{Natalie E Clark, Rebecca Lovell, Benedict W Wheeler, Sahran L Higgins, Michael H Depledge and Ken Norris, “Biodiversity, Cultural Pathways, and Human Health: A Framework”, Trends in ecology & evolution (Personal edition), 29, no. 4 (2014): 198-204, p.199}

It is helpful here to consider an example of the impact of feeling disconnected from other individuals and from community, as this sheds light on how damaging this can be, and how much incentive there is on us to connect in relationships with others. Frieda Fromm-Reichmann, a German psychiatrist and contemporary of Freud is said to have written the first scientific paper on loneliness.\footnote{John T Cacioppo and Louise C Hawkley, “Loneliness”,, p.2} She wrote in 1959 about her experience with a young female catatonic patient who was inert, totally incommunicative. A breakthrough came when Fromm-Reichmann asked her a simple question: How lonely are you? Fromm-Reichmann describes what happened next: “[The young woman] raised her hand with her thumb lifted, the other four fingers bent toward her palm.” The thumb stood alone, “isolated from the four hidden fingers.” Fromm-Reichmann asked her, “That lonely?” And at that, Fromm-Reichmann wrote, the woman’s “facial expression loosened up as though in great relief and gratitude, and her fingers opened.”\footnote{Frieda Fromm-Reichmann, “Loneliness”, Psychiatry, 22, no. 1 (1959): 1-15}

Fromm-Reichmann defined loneliness as “the want of intimacy” and suggested that it might be at the root of all mental illnesses. A “want of intimacy” could also be seen as an absence of connection. An article in The New Republic recently mentioned that loneliness has now been linked with a wide array of bodily ailments as well as the the more expected mental ones and suggested that “these discoveries are as consequential as the germ theory of disease. Just as we once knew that infectious diseases killed, but didn’t know that germs spread them, we’ve known intuitively that loneliness hastens death, but haven’t been able
to explain how.” Research suggests that loneliness sends misleading hormonal signals, alters the materials that bind to our genes, and basically impacts the operation of many of our biological systems.

It is thought to either exacerbate or cause physical diseases as diverse as obesity, diabetes, high blood pressure, heart disease, neurodegenerative diseases such as Alzheimer’s, and has even be found to accelerate the rate of metastasis of tumours. In terms of overall risk to health leading to premature death, emotional isolation — loneliness — is ranked as high as smoking. And with one in three Americans over 45 reporting chronic loneliness, and Australian research indicating that over thirty percent of Australians experienced loneliness between 2001 and 2009, with forty percent of these having experienced more than one episode, this has been characterised as a public health crisis. What is the reason for this correlation between absence of connection and physical and mental illness?

Some suggest that the reason for this is that loneliness is a failure of social networks, as the lonely do not have people to take care of them, so they get sicker than those that have a support network. However, according to John Cacioppo and Louise Hawkley, it is the feeling of loneliness that wreaks havoc on the body and brain. Cacioppo and William Patrick, referring to political obsession with economic growth, link this to economic policy. They say, echoing the situation today that causes the deaths of thousands fleeing persecution, oppression and poverty:

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501 David Baker, (The Australia Institute, Canberra, 2012), 11., p.11
503 Cacioppo and Hawkley, “Loneliness”
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A rising tide can lift a variety of boats, but in a culture of social isolates, atomised by social and economic upheaval and separated by vast inequalities, it can also cause millions to drown. 504

As Cacioppo and Hawkley summarise,

Lonely individuals are more likely to construe their world as threatening, hold more negative expectations, and interpret and respond to ambiguous social behavior in a more negative, off-putting fashion, thereby confirming their construal of the world as threatening and beyond their control. These cognitions, in turn, activate neurobiological mechanisms that, with time, take a toll on health. 505

But let us consider the positive impact of a deep feeling of connection with others in the ecosystem, as we view this possibility through Peirce’s synechism.

An Ecology of Significance

Peirce suggests that our understanding of the very notion of continuity comes from our immediate feelings:

I think that we have one positive direct evidence of continuity and on the first line but one. It is this. We are immediately aware only of our present feelings — not of the future, nor of the past. (CP 1.167)

And as mentioned previously, Peirce defines firstness as

…the mode of being of that which is such as it is, positively and without reference to anything else [and] typical ideas of firstness [are] a degree of disturbance of your consciousness…a simple positive possibility [and] qualities of feeling (CP 8.328, 329).

In Peirce’s metaphysics, the quality of what we experience phenomenologically as feeling, reduced by Cartesian dualism and its descendants to a mere footnote, or even an obstacle

505 Cacioppo and Hawkley, “Loneliness”, p.15
to the proper exercise of rationality, is a fundamental — if not the fundamental — foundation of our existence, and not only our existence, but also the existence of everything in the universe. In a similar vein, John Kormondy and Daniel Brown discuss the need for development of an

... ecological conscience, to a love, respect, admiration, and understanding for the total ecosystem of which we are a part; to an ethic that ensures the survival of the human species with quality, dignity, and integrity.506

It is interesting to note, that of the four aspects of what these authors refer to as an ecological conscience, only one of them could even possibly be described in objective, measurable, empirical terms: understanding. The other three relate to emotion and feelings: Love, respect and admiration.

It seems that it is not enough to have an intellectual understanding of synechism, our connections with nature, it must be a felt experience. It is not being alone per se, but the feeling of isolation, the lack of felt intimacy that causes the psychological and physical problems of loneliness and lack of connection, not just with fellow humans but with the rest of the natural world. If we consider the whole ecosystem as part of a community to which we belong, our society, then we can draw a different implication from the words of Cacioppo and Hawkley which we considered earlier: “lonely individuals [that is, those who feel disconnected] are more likely to construe their world as threatening, hold more negative expectations, and interpret and respond to ambiguous social behavior in a more negative, off-putting fashion.”507 So, how can this be addressed, and what can we learn from other cultures that appear to have this felt connection with the natural world?

506 Kormondy and Brown, Fundamentals of Human Ecology, p.444
507 Cacioppo and Hawkley, “Loneliness”, p.15
As we have seen, animals and plants can be seen to participate in semiosis and this means that, as Eduardo Kohn puts it, “Significance is not the exclusive province of humans” and even without conscious awareness, this “signer” is a “somebody” or a “self” — a subject, not an object. In his metaphysics Peirce assumes that “the process of nature and the process of reason are one.” (CP 6.581). And Peirce argues that, “There is in the being of things something which corresponds to the process of reasoning, that the world lives and moves, and has its being, in a logic of events” (NEM 4.343-5). Brian Goodwin notes that organisms

...are a distinct level of emergent biological order, and the one to which we most immediately relate. The recognition of the fundamental nature of organisms, connecting directly with our own natures as irreducible beings, has significant consequences regarding our attitude to the living realm.

Ricoeur in *Oneself as Another* suggests that signs or “indicators” hold a key to our self-image: “By becoming the pivotal point in the system of indicators, the ‘I’ is revealed in all its strangeness in relation to every entity capable of being placed in a class, characterised or described.” It seems that, although writing concerning speech, by defining the ‘I’ or the self, as “the pivotal point in the system of indicators,” Ricoeur is saying the same thing about ”selves.” And when we consider, as Kohn does, building on the ideas of Uexküll, that “ecological relations are not the product of mechanical cause-and-effect interactions among organisms as objects. Rather, they are the product of the interaction of the phenomenal worlds,” the Umwelten of different kinds of beings, then we see that we

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510 Paul Ricoeur, *Oneself As Another* (Chicago, IL: University of Chicago Press, 1995), p.45
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are part of what Kohn calls “an ecology of selves.” This may give us a different feeling about our place in the global ecosystem. As Kohn says,

If life is, indeed, semiotic and if biotic interactions are based on the ways in which different kinds of selves represent each other, then one way to study this ecology of selves is to describe the interpenetrating webs that connect, sustain, and create beings in terms of their sign-related qualities.511

Kohn provides a living example of how this can be applied to our relationship with the natural world using the case of the Runa people in Amazonia. They inhabit this “ecology of selves” by using a term that Kohn attributes to Eduardo Viveiros de Castro, “perspectival multinaturalism.” This enables, not just the felt understanding of different selves in the ecosystem, but their communication, and it is based on two assumptions. First, that all sentient beings see themselves as persons — they participate in a subjective experience of their world, their Umwelt, in the same way that we do of our Umwelt. Second, although all beings see themselves as persons, the ways in which they are seen by other beings depend on the ontological makeup of both observer and observed.

Communication with Nature or Cosmological Autism?

This “perspectival multinaturalism” is not a form of interspecies cultural relativism, and it is not to say that the Runa view humans and non-humans as equivalent. There is a nature/culture distinction in Runa society. But de Castro identifies at least one crucial difference between the view of nature that is dominant in our society and that of the Runa. For the Runa the original condition of both humans and animals is not that of being animal but being human; as nature is a development of culture. Runa creation myths

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tell how animals lost the qualities that are now retained by humans. Humans are the same as they have always been: “Animals are ex-humans (rather than humans, ex-animals).”\(^{512}\)

This view seems to provide a far greater level of connection than we feel with the non-human world.

Our “folk anthropology,” informed by our evolutionist, “scientific,” Cartesian narrative, leads us to the understanding that humans have an original animal nature that must be managed by culture — having been wholly animals, we remain animals “at bottom.” However, the Runa feel that, animals having been human, they must still be fundamentally human and, although their appearance belies this, their inner life is that of the human. We feel that we are animals clothed in a civilising culture; the Ruma see animals as humans clothed in the body of a beast.

Because of this understanding, the relations between the human species and most of what we would call “nature” take on the quality of “social relations.” Relationships and ways of interacting that we are used to in the human world — the way we deal with each other — now also happen in contexts where humans and nonhumans — including flora — confront each other. A woman who tends for cultivated plants may see them as blood relatives. Game animals may be approached by hunters as relatives by marriage. Shamans may relate to animal and plant spirits as either allies or enemies.

If one believes that humanity is the original condition of both humans and nonhumans, this is equivalent to saying that the soul or spirit — the subjective aspect of being — is the universal, unconditioned given and is, in fact, the ground of being, while objective

bodily nature takes on a secondary, particular, and conditioned quality. However, it beautifully reflects Peirce’s metaphysics which, as an objective idealist position, puts mind into a primary position in the universe, as demonstrated by Peirce’s initially counter-intuitive statement that “matter is effete mind” (CP 6.24). But what are some aspects of the relationships of humans with the rest of nature in Runa culture?

Under normal conditions, humans see humans as humans; they see animals as animals, plants as plants. On the other hand, in this world view, animals that are predators see humans as animals (as game or prey) to the same extent that game animals (animals that are hunted) see humans as spirits or as predator animals. Also, we assume in the Runa world that their understanding is that animals and spirits see themselves as humans: they perceive themselves as (or they become) anthropomorphic beings when they are in their own dwelling places — seen as homes or villages; and, most important, they experience their own habits and characteristics in the form of culture.

According to the Runa, animals see their food as human food (for example, jaguars see blood as beer made from maize, vultures see the maggots in rotting meat as grilled fish); and animals see their bodily characteristics such as fur, feathers, claws and beaks as body decorations or cultural instruments; they see their social system as organized in the same way as human institutions are with chiefs, shamans, ceremonies, extended family relationships, and more.

The idea of a world comprising a multiplicity of subject positions does looks very much like an extreme form of inter-species relativism. Some ethnologists have suggested that what de Castro calls “perspectival multinaturalism’ means that ‘every perspective is equally valid and true’ and that ‘a correct and true representation of the world does not
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exist.” But de Castro responds that this does not give a true picture. It would be reasonable to assume that as far as humans are concerned, there is only one correct and true representation of the world. If, as a human, you start seeing the maggots in rotten meat as grilled fish, then something is wrong; only from the vultures’ point of view are maggots seen as grilled fish. The exception to this is the shaman who, under special conditions can become “species-androgynous.”513

This seems strange to our sensibilities, but it is interesting to see how Peirce describes his relationship with his dog:

As for the senses of my dog, I must confess that they seem very unlike my own, but when I reflect to how small a degree he thinks of visual images, and of how smells play a part in his thoughts and imaginations analogous to the part played by sights in mine, I cease to be surprised that the perfume of roses or of orange flowers does not attract his attention at all and that the effluvia that interest him so much, when at all perceptible to me, are simply unpleasant.

He does not think of smells as sources of pleasure and disgust but as sources of information (italics added), just as I do not think of blue as a nauseating color, nor of red as a maddening one. I know very well that my dog’s musical feelings are quite similar to mine though they agitate him more than they do me. He has the same emotions of affection as I, though they are far more moving in his case. My…friend who asks whether we can ever enter into one another’s feelings…might just as well ask me whether I am sure that red looked to me yesterday as it does today. (CP1.314)

And as Noë suggests in an essay entitled *If You Have To Ask, You’ll Never Know*:

If you need information about what is happening in the brain of a dog to know that dogs think and have feelings and emotions, then either you’ve never met a dog or your own humanity is in doubt. You can no more seriously entertain the possibility that a dog is a mere automaton than you can entertain such a hypothesis about your human loved ones. To do so would require you to stand back and look at what a dog (or a person) does (and says) as devoid of meaning and expressive power. And to do that would be disrespectful….

513 Ibid., p.471
As the writer and professional animal trainer Vicky Hearne has argued persuasively, you can’t actually work with dogs if you don’t take them seriously as, well, responsible agents. A search-and-rescue dog, for example, or a seeing-eye dog is, not a tool, but a collaborator (italics added).  

The case of the Runa also illustrates the impact of losing the ability to interact effectively with other species in the ecosystem, not in a relationship that could be described in very bland terms as “sustainable,” nor in a Disneyesque “harmony,” but as “an ecology of selves.” The Runa, their dogs, and the animals of the forest, exist within networks of predation. The Runa are dependant on being able to find prey in the forest and if the capacity to recognise subjectivity is vital for this — to see the prey not just as objects to use but as “selves” in the ecosystem — then being unable to do this can be disastrous.

As an example, the Runa recognise something they call the “hunting soul”, which allows hunters to be aware of prey in the forest. Enemy shamans sometimes steal this soul and if this happens, their victim can no longer detect animals. Without this soul, hunters lose their ability to treat prey beings as selves, and they can, therefore, no longer differentiate animals from the environment in which these beings live. Kohn suggests that, when men lose their hunting souls, they become, in a certain sense, “autistic.”

The disorder know as autism is not well understood, but much research shows that it includes oversensitivity to all stimuli, particularly interpersonal ones. It has been suggested that the particular difficulty with managing interpersonal stimuli by those on the autism spectrum is a due to cognitive differences in those individuals that makes it more challenging for them to understanding other people as intentional beings. This view


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sees it as a pathological barrier to empathy, and it is in this sense that Kohn uses the analogy. In this case, cosmological autism, within the context of a Runa ecology of selves, refers to what happens when beings of any sort lose the ability to recognise those other beings that inhabit the cosmos as selves. This would appear to be a pathology from which most of the world suffers and an ecological civilisation could provide a reparative for this malady.

As I have argued, this is an epistemological crisis that involves our social relationships, including our relationship with the rest of nature. So, let us consider how alienation and disconnection from the rest of nature could be addressed by a consideration, semiotically, of the intentional aspect of communication: Rhetoric.
Chapter 12: Persuasive Epistemology

Rhetoric tends to be seen in the position of a servant, creating compliance to the dominant ideology, and this is often how it operates today. However, in this chapter, I argue that rhetoric plays an important role throughout the natural world, and an appreciation of this enables us to see how it can assist in the formation of an ecological civilisation. I also articulate the integral place of rhetoric in Peirce’s metaphysics, and how it provides additional evidence for Peirce’s synechism and adds to our understanding and feeling of connection with the rest of the natural world which, I argue, can enable the transformation of our society and civilisation.

The Development and Corruption of Rhetoric

AN EPISTEMOLOGICAL FRAMEWORK THAT will support this project needs to appreciate the importance of rhetoric, not only to build our understanding nature and of our relationship with the rest of the natural world, but also in being able to communicate these findings to the community, an aspect of scientific enquiry which Peirce counted as vitally important for knowledge and understanding. Rhetoric deals with the intentional aspect of communication and considers the effort of a message, the force that is applied by it, and it may therefore be considered as the work done by semiosis. It is an art of persuasion, with the intent of capturing the attention of an audience and to moving it to action. Steve Mackey notes the broad application of “rhetoric” in many spheres. He identifies

…the practice of oratory; the study of the strategies of effective oratory; the use of language, written or spoken, to inform or persuade; the study of the persuasive effects of language; the study of the relation between language and knowledge; the classification
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...and use of tropes and figures; and, of course, the use of empty promises and half-truths as a form of propaganda.\textsuperscript{516}

I will consider Peirce’s view of rhetoric in more detail below, but it is good to note that he did consider it as an essential component of semiosis. Peirce divided his semiotic into three branches, Speculative Grammar, Speculative Critic, and Speculative Rhetoric (EP II: 297 ff). I will argue that a semiotic consideration of rhetoric highlights its importance to this project, and in this vein Stephen Rupp suggests that rhetoric can be regarded as a precursor of the more general theory of textual semiotics and subsumed under the categories of semiotic analysis.\textsuperscript{517} But it is interesting, first, to note the ancient connection between semiosis and rhetoric by examining the historical development of rhetoric.

Augustine of Hippo (354-430 CE) was not only Professor of Rhetoric for the imperial court at Milan, but also established the foundations for semiotics, as his work is said to be “fundamental to the development of medieval semiotic, and...constituted the only elaborate theory of signs until the 13\textsuperscript{th} century.”\textsuperscript{518} However, prior to the conception of semiotics by Augustine, rhetoric had enjoyed great prominence in the classical Greek world. There was a compelling reason for this, according to Douglas Ehninger. The development of democratic institutions in the city states of Sicily and Greece led to a great emphasis on speechmaking as a social instrument for “for the making of laws, the administration of justice, and the honoring of heroes,” and later as an art form in itself. Because of the key role that speechmaking played in the young democracies, there was great

\textsuperscript{516} Steve Mackey, “The immunisation controversy as an illustration of who we are” (Notes from the Swinburne University of Technology, Complex Processes Research Group, November 1, 2013), 4., p.4


interest in this art, particularly as it relates to increasing the effectiveness of the act of persuasion. As Ehninger asks, when referring to the importance of rhetoric in civic life:

How could proficiency in the important business of performing this speech act be taught in a society where every man must act as his own lawyer and his own legislator? How might instruction in speechmaking be methodized and imparted to the masses?\(^{519}\)

However, it was during this period that the potential for rhetoric to abuse its power was realised. In the case of the trial of Socrates, it was through the use of rhetoric he was condemned to death, showing its power to generate support for acts that are, when judged rationally, morally corrupt. As Vincent Colapietro describes it,

…the apparent triumph of rhetoric over philosophy in the condemnation of Socrates by the majority of the citizens of Athens points to an agon, a struggle in which the advocacy of a philosophical rhetoric is artfully (though, in the end, ineffectively) pitted by Socrates against the rhetoric derived from the paradigms of acclaimed orators.\(^ {520}\)

The teaching of rhetoric was a key component of education during Medieval times. Referring to the three pillars of the Trivium of medieval education, grammar, logic and rhetoric, Joseph Schwartz and John Rycenga explain that “grammar is correctness of discourse, logic is intellectual content, rhetoric is management of language and imaginative and emotional content.”\(^ {521}\) Steven Pain explains that classical argumentation, as defined by Aristotle, consisted of three arts: demonstration, dialectic, and rhetoric. Pain argues, though, “that competency [in rhetoric] runs along an experiential and evolutionary axis.” And he also draws a key distinction between logic and rhetoric, as “unlike logic which requires strict adherence to a set of rules, rhetoric can deviate from true logical reasoning,

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as its teleology is a good rather than a truth.”\textsuperscript{522} In particular, this “good,” at least in classical Aristotelean rhetoric, related to the good of the \textit{polis}, the public (or community) good. But modernity drove a major change to the structure and function of rhetoric.

As Ehninger describes it, whereas “the rhetoric of the classical period was basically ‘grammatical’ in nature, the rhetoric of the [modern] period…is best described as ‘psychological.’”\textsuperscript{523} Thus, a more instrumental approach was taken, as “[practitioners of rhetoric] fused the traditional areas of invention and arrangement into the broader concept of the conduct or ‘management’ of a discourse and included in this rubric all of the grosser resources, both substantive and methodological, by which the listener could be persuaded.”\textsuperscript{523} As Mackey explains the implications of this:

The dominance of a purist, “scientistic” form of reason since the Enlightenment has eclipsed and produced multiple misunderstandings of the nature, role of and importance of the millennia-old art of rhetoric. For centuries the multiple perspectives conveyed by rhetoric were always the counterbalance to hubristic claims of certainty.\textsuperscript{524}

And this corruption of rhetoric has continued. Richard Weaver cites Socrates as articulating a striking example of the corrupt use of rhetoric, which could equally be applied today:

The selfish lover contrives things so that the beloved will be most agreeable to him and most harmful to himself. [He uses] speech which influences in the direction of evil: base rhetoric…hates that which is opposed to its will; always trying to keep its objects from the support which courage, noble associations and divine philosophy provide a man.\textsuperscript{525}

\textsuperscript{523} Ehninger, "On Systems of Rhetoric", p.136
\textsuperscript{525} Richard Weaver, \textit{The Ethics of Rhetoric} (Chicago, IL: Henry Regnery, 1953), p.11
Today there is enormous research into the means to persuade, and the mechanisms for delivery grow more and more sophisticated and pervasive. Weaver provides a political application of Socrates’ example:

In journalism and politics the many are kept in a state of pupilage so that they will be the most docile to their lovers; nothing is more feared than a true dialectic — this gives some training in intellectual independence, [as the] base rhetorician today has means of deluding which no ancient rhetor in forum or market place could have imagined.  

And the impacts of this? Amy Bartholomew and Jennifer Breakspear give one example:

A well-oiled public relations machine, replete with politicians to add accountability, embedded journalists to add ‘integrity’ and public intellectuals to add weight, lays the groundwork for war without end.

David Harvey gives another example, with regard to the current neoliberal ideology and its success:

Neoliberal rhetoric, with its foundational emphasis upon individual freedoms, has the power to split off libertarianism, identity politics, multi-culturalism, and eventually narcissistic consumerism from the social forces ranged in pursuit of social justice through the conquest of state power.

Eco describes this form of rhetoric as “aberrant rhetoric” which includes ideological discourse, fraudulent propaganda and mass persuasion and semiotic distortions at every component of the rhetorical discourse. But let us now consider Peirce’s view of rhetoric and establish whether there are elements that might help to provide a form of rhetoric that is more conducive to the establishment of an ecological civilisation.

526 Ibid., p.12
528 Harvey, A Brief History of Neoliberalism, p.41
529 Eco, A Theory of Semiotics, p.278
The Unruliness of Rhetoric

As I have argued, Peirce assigns a fundamental role to rhetoric in his metaphysics. As Potter summarises this, Peirce divides logic into two areas: first, logic in the broad sense as “normative logic,” which includes speculative or formal grammar, signs qua signs, and Logic in a narrow sense, or critic, truth of signs. The second division is Speculative or formal rhetoric, or objective logic, which is the communication of signs. De Waal suggests that

Speculative rhetoric includes pragmatism, the theory of the economy of research, synecchism (the view that whenever possible we should regard all things continuous), and what today we call philosophy of science.

Thus, in Peircian terms, without rhetoric, there is no semiosis and, as mentioned previously, rhetoric is semiosis in action. In this way, Peirce also avoids a dualism between logic and rhetoric, between reason and emotion, and between rationality and persuasion, dualisms implicit in modernity and contributing to the “aberrant rhetoric” of today. As Colapietro observes, “Such a disjunctive understanding of logic and rhetoric is precisely what Peirce’s rhetorical turn is designed to undercut (or deconstruct),” and interestingly, Pain describes this difference in spatial terms to emphasise the power of rhetoric as follows:

The difference between logic and rhetoric can be characterised in spatial terms; rhetoric occupies greater conceptual and perceptual space than logic. From this we could conclude that logic in its general form is more manageable than rhetoric (italics added).

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530 Potter, Charles S. Peirce on Norms & Ideals, p.22
531 de Waal, Peirce: A Guide for the Perplexed, p.57
532 Colapietro, "CS Peirce's Rhetorical Turn", p.20
533 Pain, "Biorhetorics: An Introduction to Applied Rhetoric", p.769
If rhetoric is, therefore, less “manageable” than logic or rationality, why is this significant to this project?

The traditional view of rhetoric allows for it to provide “pleasure as much as persuasion” and include “the arts of configuring linguistic signs in such a way as to provide occasions for distinctively aesthetic pleasure.” And Peirce argues that “rhetoric ought to be the doctrine of the adaptation of the forms of expression of a [piece of] writing to the accomplishment of its purpose…[This discloses] the general secret of rendering signs effective.” (EP 2.326)

Peirce therefore noted that facts alone are not enough to produce actions from ideas, recognising the role of power and persuasion in the acceptance of beliefs and their translation into associated action. As he stated, “Take any general doctrine you please, and it makes no difference what facts may turn up: an ingenious logician will find means to fit them into the doctrine. Ask the theologians if this is not true.” But with regard to rhetoric, Peirce notes that some ideas carry within them the power to generate their own rhetoric and thereby achieve power and prominence:

[T]here are certain cases where the force of conviction practically cannot be resisted; and one of these is the experience that one opinion is so far from being as strong as another in the long run, though it receives equally warm support, that on the contrary, ideas utterly despised and frowned upon have an inherent power of working their way to the governance of the world, at last. True, they cannot do this without machinery, without supporters, without facts; but the ideas somehow manage to grow their machinery, and their supporters, and their facts, and to render the machinery, the supporters, and the facts strong (CP 2.149).

This is both the power and the unruliness of rhetoric, its subtlety and its strength: It can cause ideas to “[work their] way to the governance of the world” without any prime

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534 Colapietro, “CS Peirce’s Rhetorical Turn”, p.17
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mover or organised movement behind them. Alexander adds that in making transformations, we do not need to articulate the complete method, or even the end point of the transformation, as he states that,

This latent structure is the weakly held system of centers that are not quite defined yet, only partly articulated as a structure — yet which carry the inspiration of what this thing might be, where it might go. Every wholeness carries within it this 'vector' in time, pointing in some direction, and indicating where it might go. This is the most important aspect of wholeness, and the reason we must try to 'feel' the structure when attempting structure-preserving transformations, hence every step of a living process. That, too, is experienced by us as feeling. [...] It may seem ridiculous to say that the world will be improved in its organisation if people are able to act, at every scale according their feeling. But it is the whole that is being damaged by the loss of feeling.535

But if, as mentioned earlier by de Waal, speculative rhetoric includes philosophy of science, how could we explain the role of rhetoric in science, and how could it help resolve our epistemological crisis?

Ethics and Emotion of Rhetoric

Peirce viewed rhetoric as vital for the advancement of knowledge through science. Colapietro continues with his discussion of Peirce’s view of rhetoric by noting that by

…identifying himself as a scientist…Peirce was consciously distancing himself from preachers, teachers, and litterateurs, figures for whom rhetoric is of paramount or, least, central importance.

However, the aim of Peirce’s rhetoric is clear, according to Colapietro:

The principal aim of scientific writing is, hence, to goad and guide the activities of inquirers in the direction of truth. Put otherwise, it is to render efficacious whatever signs bear

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upon questions to which one or more communities of investigation have devoted themselves (above all, to novel phenomena and provisionally tenable hypotheses).536

De Waal says of Peirce’s method of science, that “it seeks to take into account both the impact of experience and the beliefs of others (italics in original).”537 I note also that Peirce’s rhetoric has an intense focus on the practice of scientific enquiry towards an end, as he explains that

…and methodeutic looks to the purposed ultimate interpretant and inquires what conditions a sign must conform to, in order to be pertinent to the purpose. […] Two other problems of methodeutic which the old logics usually made almost its only business are, first, the principles of definition, and of rendering ideas clear; and second, the principles of classification (italics added). (NEM 4:62)

And de Waal nicely sums up Peirce’s view of rhetoric when he suggests that

…and in a sense, Peirce here reflects the View that it is the facts and not the opinions of others that should do the persuading. Moreover, as Peirce considers inquiry a decidedly communal affair — up to the point of making ‘solitary scientist’ an oxymoron — speculative rhetoric does involve the art of communication and the art of persuasion also in the more traditional sense.538

As mentioned previously, Peirce’s rhetoric has an intense focus on the practice of scientific enquiry towards an end, and this means that it has strong links to his Ethics.

There is much support for the idea that a connection between ethics and rhetoric is fundamental to the practice of both. As Mackey notes of Aristotle, this scholar of rhetoric,

…also wrote the Nicomachean Ethics [and] codified rhetoric as requiring the elements of ethos, logos and pathos — character, logic and emotion. In other words we are not persuaded by people if they have poor character even if they speak with the utmost rationality and instil deep emotion in us. Morality is intrinsic to how communication helps us to form our thought.539

536 Colapietro, "CS Peirce’s Rhetorical Turn", p.27
538 Ibid., p.57
539 Mackey, "Rhetoric and Rationality", p.18
And, at a more fundamental level, scientific enquiry is a moral enterprise. As De Waal applies Peirce’s assertion that “the approval of a voluntary act is a moral approval” (RLT 312.28),

…and the idea that reasoning involves experiment also brings us back to the notion that logic, including scientific reasoning, is a normative enterprise. Experimentation [including the construction of diagrams, for example,] involves voluntary action that we deliberately approve of.²⁴⁰

Peirce’s rhetoric is deeply connected to his Firstness, manifested as feeling. As Murray Code argues, “although a properly rational philosophical rhetoric eludes definition, what is generally indicated is one capable of accommodating Whitehead’s general definition of a proposition as a ‘lure for feeling.’ As [Whitehead] notes, ‘the main function of propositions in the nature of things...is not primarily for belief, but for feeling at the physical level of unconsciousness.’”²⁴¹ And Walter Ong concurs, arguing that rhetoric lies between the conscious and unconscious minds, stands on a psychologically primitive base, an idea which is supported by Aristotle’s use of enthymeme as a feeling, an argument which is not fully conscious, an argument which is felt but unexpressed, as an enthymeme is an argument in which one premise is not explicitly stated, the premise to be supplied by the audience.

Ong also cites Jacques Durand, and his assertion that rhetoric enables a translation of meaning from the sign language of symbols, which he describes as polysemous, or

²⁴⁰ de Waal, Peirce: A Guide for the Perplexed, p.103
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carrying many meanings, to the formalism of logic, where signs carry a formal and pre-
scribed meaning.\textsuperscript{542} This is certainly something we experience viscerally, as Weaver ex-
plains, “rhetorical language excites interest (pleasure or alarm); people listen instinctively
to to the person whose speech betrays inclination — the greater the degree of inclination
the greater the curiosity or response.”\textsuperscript{543}

In Peircian terms this places the origins of rhetoric in Firstness — a fundamental
part of the nature of all of the universe, and this supports the idea of the pervasiveness of
rhetoric throughout all of nature and its importance in the production of change towards
an ecological civilisation.

Rhetoric Throughout the Biosphere

If, as mentioned above, rhetoric “stands on a psychologically primitive base,” is
there a synechistic element of rhetoric that sees it pervading the biosphere, making it an
integral component of the semiosphere? Pain suggests that \textit{biorhetorics} should stand on its
own as a separate discipline alongside biosemiotics, bioinformatics and cybernetics.\textsuperscript{544} In
2001, Kull, in an analysis of the possibility of considering living systems as rhetorical sys-
tems, coined the term “biorhetorics,” which he defines as “a view on, and a study of, living
systems as rhetoric devices.”\textsuperscript{545}

This means that living systems are interpreted as analogical to parole (speech, the
specific, concrete instances of the use of language by a linguistic subject), and not so much

\textsuperscript{542} Walter J Ong, "Rhetoric, Romance, and Technology: Studies in the Interaction of Expression and
Culture.,” in \textit{Rhetoric, Romance and Technology: Studies in the Interaction of Expression and Cul-
\textsuperscript{543} Weaver, \textit{The Ethics of Rhetoric}, p.9
\textsuperscript{544} Pain, "Biorhetorics: An Introduction to Applied Rhetoric", p.770
as langue (language, the systematic rules and conventions of a signifying system), linguistic terms discussed by Saussure.\textsuperscript{546} This agrees with Peirce’s previously cited idea that, “The action of a sign generally takes place between two parties… They need not be persons; for a chameleon and many kinds of insects and even plants make their living by uttering signs, and \textit{lying signs}, at that (italics added).”\textsuperscript{547} A “lying sign” would seem to be a misleading statement, used for the purpose of persuasion — a form of rhetoric.

Continuing in this line, George Kennedy notes, “rhetoric” has had various meanings across times and cultures but he also suggests that “there is something found in nature that either resembles rhetoric or possibly constitutes the starting point from which it has culturally evolved.”\textsuperscript{548} He also suggests that rhetoric is present in physical actions, facial expressions, gestures, and “signs generally” and that it is manifest in all animal life. There is an evolutionary impetus for this as, although communication skills have some energy cost, this would be, in most cases, less costly in terms of energy than physical motion such as flight or fight. And, as he observes, many animals can understand some features of human rhetoric, such as gestures or sounds that express anger, friendliness or even commands, and humans can — at least to some extent — learn to understand animal rhetoric, as I will consider in more detail later.

Kennedy sees this as evidence that we share a “deep universal rhetoric.”\textsuperscript{549} Schwarz cites Plato in \textit{Phaedrus} as suggesting that rhetoric is the knowledge of different kinds of argument and different kinds of souls, and how to fit one to the other.\textsuperscript{550} Plato’s \textit{psyche}, of

\textsuperscript{546} Ibid., p.697
\textsuperscript{547} Deely, \textit{Basics of Semiotics}, p.84
\textsuperscript{549} Ibid., pp.4, 6
\textsuperscript{550} Schwartz and Rycenga, \textit{The Province of Rhetoric}, p.21
course, includes desires and emotions, as well as rationality and therefore how well that description fits the use of rhetoric for inter-species signalling in the Umwelten of the organisms! (Although Plato, as one who helped to define the dualism that Descartes later solidified, would not have included animals and plants as “kinds of souls.”)

As all parents can testify, a prelinguistic child can use elements of rhetoric very effectively to persuade its parents of the urgency, if not the specifics, of its needs, and this infers that language ability is not a prerequisite for rhetoric, although semiotic capacity is required. In addition, Kull,\textsuperscript{551} discussing biorhetoric, notes that rhetorical turns may appear on the basis of unexpressed, unconscious desires, and may be manifested in an involuntary manner. Also in contrast to the purely anthropomorphic view of rhetoric, Pain suggests that biorhetoric is “closer to demonstration than argumentation.” He notes that although biorhetoric

\begin{quote}
...may use calculation, mathematical symbols and syllogism albeit enthymetic, and has non-human or impersonal elements to it...it does also emphasise and begin with the notion of audience agreement, has a sense of communality, and aims toward a good.\textsuperscript{552}
\end{quote}

So let us consider how this can be applied to rhetoric in the non-human realm to support our anti-dualistic argument.

From a Peircian semiotic viewpoint, animal rhetoric, or biorhetoric, well encapsulates the triadic nature of signs and their interpretation. As Kennedy illustrates, the song of a male bird is thought to often perform a dual signalling function. Thus, as interpreted by another male bird, it conveys that a territory is occupied (to repel them), and as interpreted by a female it signals the male’s readiness to mate (in order to attract).\textsuperscript{553} Kennedy

\textsuperscript{551} Kull, "A Note on Biorhetorics"
\textsuperscript{552} Pain, "Biorhetorics: An Introduction to Applied Rhetoric", p.758
\textsuperscript{553} Kennedy, "A Hoot in the Dark: The Evolution of General Rhetoric"
even suggests that, at least in animal rhetoric, elements of ethos, pathos, and logos, the three traditional components of effective rhetoric, are inherent in it. Specifically, in the case of an animal raising an alarm for the benefit, not only of themselves, but also for their “community,” such as a pack, we may observe all these components. First, the originator of the communication needs to be recognised as a credible member of that community — presumably by emitting a well-formed cry (ethos), it has produced a message that can communicate the feeling of threat that the originator experiences (pathos), and has signalled the reason for that feeling by emitting the cry that denotes a predator (logos). This can also apply to interspecies communication.

Pain notes that, even within the single species *homo sapiens*, there will be major differences in the styles, method and even language used in rhetoric. However, he allows that “there are cardinal emotions that can be read by all members of humanity and even here we can talk of a degree of rhetorical competency.” He then suggests that in communication from human to non-human species, domestic animals are susceptible to styles of rhetoric, as he notes, “we can see that at the stage of delivery, the tone of the voice and the nonverbal language can be followed.” And he also suggests that,

…without being ridiculous we could descend down this line all the way to the simplest form of life like the bacteriophage… Each life form can be said to have a degree of competency [in rhetoric].

He recognises that this claim is not without controversy, as

…the cognitive and neuroscientists [would not] be pleased at the notion of according lower life forms the cognitive skills to be able to follow a rhetorical argument. But as with the question of cognition, rhetorical competency can be said to be dependent upon the level of the rhetor and audience. It is perfectly acceptable to talk of a continuum of rhetorical competency, just as we talk of an axis of language evolution.”

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554 Pain, "Biorhetorics: An Introduction to Applied Rhetoric", p.761
Effective rhetoric considers the *kairos*, the context of delivery, including the audience, which impacts the manner and method of delivery of the rhetorical utterance, and the situation that has led to the expression of rhetoric. Pain suggests that the *kairos* of rhetoric could be seen as corresponding in biosemiotics to the Umwelt of a species. Pain also notes that, as a component of the *kairos*, the audience and its dynamics is especially important in biorhetorics, as a biorhetorical ‘utterance’ might be directed to an individual member of a species, a family, or a very large group. For example, it could be a signal from a female to indicate readiness to mate, directed at a nearby individual, or to a group of all the nearby sexually active males, in order to arouse their interest.

Kull suggests that, although “it is quite improbable that the classical notions of rhetorics are of much use in a biological realm” there may exist certain diversity among biorhetorical figures, which he refers to as biotropes, trope-like rhetorical signs used in biological communication. As an example of these tropes, Kull refers to biohyperbole, such as the appearance of bodily enlargement through the ruffled up plumage of some birds, in either conflict or mating situations. He also uses the example of handicap traits, threatening poses, warning coloration, and alarm signals as used by many birds, mammals, reptiles and even insects. Mimicry, also widely distributed in the animal realm, and arguably used by viruses, would be an outstanding example of a biotrope. Kull also uses the neologism “bio-onomatopoeia,” using the example of a bird imitating another’s song.

It is interesting, too, when we consider the pervasiveness of biotropes in nature, to compare the anthropomorphic, persuasive animal as a common character in modern (and ancient) fictional narratives, with one of the most well-known examples being Br’er

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555 Ibid.
556 Kull, "A Note on Biorhetorics"
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(Brother) Rabbit from the series of *Uncle Remus* books by Joel Chandler Harris, the first one of which was published in 1879. The “trickster,” Br’er Rabbit has his origin in African-American folktales, and this character has a long history, with Kull suggesting that “forest peoples — such as Indians, or Finno-Ugrians — considered animals to be rhetorical.”

In introducing the concept of biorhetoric, Kull asks whether a cat, calling its owner from the door, can be considered to be persuading a human host to allow it to enter, or whether an orchid, using its form, colour and fragrance is persuading an insect — and likely a particular species — to enter it for pollination. These examples require us to attribute agency to the animal and the plant, and enable us to see a common experience, and to feel greater empathy to those that display it. How, though can we apply the Peircian, synechistic view of rhetoric as pervading the biosphere towards the resolution of our epistemological crisis?

Weaver highlights the importance of what we might term a “complete” rhetorical utterance, when he notes that effective rhetorical language excites interest, be it pleasure or alarm, and he observes that people listen instinctively to the person, or indeed the animal, whose speech betrays inclination — the greater the degree of inclination the greater the curiosity or response. He suggests the duty of rhetoric is to bring together action and understanding into a whole that is greater than a reductive, mechanical approach might achieve. It is as though an effective rhetoric, although purposeful, is performed with a deeper meaning.

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558 Kull, "A Note on Biorhetorics*.
559 Weaver, *The Ethics of Rhetoric*, pp.9, 14, 24

Persuasive Epistemology

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As I have discussed previously, there are many examples that show the futility of relying solely on rational persuasion to move public opinion, so vital in a democracy, to address urgent uses of climate destabilisation. As Baruch Fischhoff argues,

...when a science provides essential inputs to decision makers, receives support based on its usefulness, and is subject to hostile scrutiny...it is needlessly risky for scientists to rely on their intuitions about what to say and how to say it. They deserve the help of social and decision scientists — and criticism if they refuse it. The stakes are too high for ad hoc communication.[...] Connecting climate science with climate decision making will require such research, making the science of communication central to the science.  

Weaver suggests that “Britain started to win WWII only when Churchill started to match Hitler in rhetoric” and that “rhetoric at its truest seeks to perfect men by showing them better versions of themselves.” And as Schwartz attributes to Aristotle, “truth tends to prevail over error, but when skillful men want error to prevail, truth needs the help of an attractive and revealing setting as possible.” So, rhetoric, understood in the light of its historical development, and seen through the lens of Peircian semiotics, has much to contribute to the establishment of an ecological civilisation through its role in establishing empathy as well as legitimising and enabling a persuasive and communicative element to epistemology, and therefore, along with a consideration of the many aspects of human ecology, combined with semiosis, it forms a fundamental aspect of a more complete approach to scientific enquiry.

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561 Weaver, *The Ethics of Rhetoric*, pp.20, 25
562 Schwartz and Rycenga, *The Province of Rhetoric*, p.14
Part 4 Transformation

“If you want to build a ship, don’t herd people together to collect wood and don’t assign them tasks and work, but rather teach them to long for the endless immensity of the sea.” — Antoine de St. Exupéry\textsuperscript{563}

Introduction to Transformation

THE CHANGES THAT ARE necessary to cultivate an ecological civilisation are manifold and, as I have discussed, they include change at the individual and societal level. In line with Peirce’s metaphysics, I argue that our feelings about our relationship with nature should be able to reflect an understanding of humans as sharing characteristics with the rest of the natural world as semiotic beings. This assists us to see experience and the feelings that it brings as a valid form of knowledge. The application of this to our knowledge of the natural world enables us to repair a dysfunctional relationship with the rest of nature through understanding semiosis as forming a common language, and this helps us to form a communicative bond with the rest of nature.

As I have argued, the current dominant ideology, including approaches to acquisition of knowledge about nature and our place in it, actually contribute to the problems we have with our relationship with the natural world, as they are “based on a combination of mechanistic biology, genetic reductionism, economical determinism and neo-Darwinian cultural and biological perspectives.” Therefore, we need to use an approach that allows us to examine these issues from a holistic perspective. As Simon Levin suggests:

[If we are] to have any hope of dealing with such a complex combination of threats to our survival, we must study the Earth as an integrated physical and biological system. […] We need to relate the macroscopic to the microscopic, and in particular we must elucidate the fundamental importance of biodiversity for the sustenance of life as we know and enjoy it, and the degree to which the evolutionary process operates to maintain that critical support system.

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564 Bruni, “Biosemiotics and Ecological Monitoring”, p.298
As I will discuss in more detail later, we have moved from a social society, that is one based on relationships, to a system society, one based on a reductionist, mechanistic, and exploitative view of other humans, and of the rest of nature, and an ecological civilisation is not a system society, but a social society, one based on relationships. Therefore, we need to consider the transformations needed in the light of our current society, its ideological underpinnings and how this impacts us as individuals. We can then consider individual transformation and how it can impact society as a whole.

I also further examine the role of semiosis in the production and preservation of culture within our own Umwelt, and how this shapes our relationship with the rest of the natural world. In particular, I consider how ideology shapes us as individuals and as a society. This will require us to consider the models, metaphors and narratives that shape our view of our relationship with the natural world, and how changes to these models, and the use of new metaphors as well as the articulation of new polyphonic narratives can bring about transformation of society and civilisation.

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566 Steiner, "Human Ecology As Transdisciplinary Science, and Science As Part of Human Ecology", p.482
Chapter 13: Exposing Ideology to Change

In this chapter I examine the semiotic aspects of ideology and its basis in the concepts of schema based on sign displacement. I also discuss the functions of ideology in legitimating power structures and relationships — including those of humanity with the rest of nature — and in integrating a society so that it presents a cohesive structure and resists change. I discuss how our world view is formed, how it can change and how this relates to the influence of ideology. I also show how societal fields are maintained and how it is possible that they can be reconfigured.

The Signs of Ideology in a Peircian Light

IDEOLOGY IS A POWERFUL force that shapes us as individuals and as a society and, as I have mentioned, the communication, maintenance and manifestation of ideology is a process that makes extensive use of signs and symbols. Therefore this process should be examined semiotically. And many scholars agree with the importance of understanding the semiotic in ideology. As Murray Code notes, “the ultimate worth of an interpretive substructure depends on the quality of the metaphors, or metaphysical imaginary, that guides the movements of reason.” And the “movements of reason” implies that our reasoning is subject to change. In this chapter I will argue that these “metaphorics” and “metaphysical imaginary” are signs and systems of signs, and are therefore best understood through Peircian semiotics, and that this will enable us to see more clearly the pos-

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sibilities for change in reasoning, and therefore in civilisation. In Peircian terms, our interpretation of signs, and therefore our understanding of the world, is guided by the habits that we have developed. As mentioned previously, Peirce states that this is: “a habit of feeling which has grown up under the influence of a course of self-criticisms and of hetero-criticisms” (CP 1.574), and this, again, implies that change is a fundamental part of habit formation.

V. N. Vološinov notes that aspects of ideology are not only part of a natural or social reality, but they also “reflect and refract” another external reality. He continues: “Everything ideological possesses meaning: it represents, depicts, or stands for something lying outside itself. In other words, it is a sign. Without signs, there is no ideology.”568 He also emphasises the broad semiotic character of ideology, as he argues that existing alongside the words used to describe sets of beliefs and assumptions that make up an ideology are “fundamental, specific ideological signs.”569 All the products of ideology can certainly be considered from a semiotic viewpoint, in fact, Winfried Nöth, in line with Peirce’s semiotic idealism, refers to it as “pansemiotic,” that is, consisting entirely of signs,570 and Mikhail Bakhtin and Pavel Medvedev concur, saying: “All the products of ideological creation — works of art, scientific works, religious symbols and rites, etc. — are material things, part of the practical reality that surrounds man.”571 Works of art, religious symbols and rites are effective in communicating and maintaining ideologies exactly because they

569 Ibid., p.15
impact our emotions and produce deep feelings thus, as I have discussed previously, impacting our “rational” thought processes. This is the interpretive aspect of ideology, but there is more to ideology than this.

The deepest level on which ideology can be conceptualised is that of integration. Ricoeur suggests that at this level ideology does not distort but acts positively to provide to members of a group identity and self-understanding of the values of the group — and its members — as expressed in the ideology. This integration supports identity, self-understanding and values across space and time. A diaspora can retain these characteristics worldwide so long as they continue to subscribe to the elements of the ideology, and celebrations and rituals are founded in temporally and spatially distant events that reinforce the integrative value of the ideology. Ricoeur uses the examples of the French Bastille Day and American Fourth of July to illustrate this, and he also refers to the political system of the former Soviet Union as being based on and sustained by the symbolic value of a single building, in this case Lenin’s tomb.572

Drawing on Max Weber’s ideas of motivation, Ricoeur suggests that the second functional level of ideology is that of legitimation. As Rui Costa-Lopes et al. define it in terms of social psychology,

\[\text{Legitimation refers to the social and psychological processes by which attitudes, behaviors, and social arrangements are justified as conforming to normative standards — including, but not limited to — standards of justice [and this] allows individuals and groups to exert influence over others to gain voluntary deference in the absence of coercion.}^573\]

572 Ricoeur, Lectures on Ideology and Utopia, pp.255-266
Costa-Lopes et al. also identify three basic goals or motives served by processes of legitimation, that apply at an individual, group and systemic level: the motivation for an individual to preserve a positive self-image by, for example, complying with society’s norms and values; the desire by the group to achieve or maintain social dominance and power relations; and the systemic goal to maintain, enhance and justify the societal status quo.574

Ricoeur applies legitimation in the sense that those operating within the social order defined by the ideology do so with at least some degree of assent.575 This describes the relationship between a claim to legitimacy of rule by those ruling, and the belief in that legitimacy that is subscribed to by those ruled over. In most societies there will be some discrepancy between the claim and the belief — in some cases a very wide gap — as claim to legitimacy of rule may not be able to be sustained rationally. Ideology’s role as a legitimating agent is to fill that gap and, as may be deduced, this is another form of distortion — in this case, of rational belief. Of course, ideology may not be enough to fill this gap, and is often supplemented by force, and ideology also acts to legitimise this use of force.

This use of force is applied not only to human subjects but also, as Browne, after Castoriadis, notes,

In the first instance, the capitalist imaginary originally constituted a new investment in the domination of nature. It therefore goes together with the devaluation and disenchantment of nature into a realm potentially open to human domination and control. At the same time, the exercise of reason, rather than magic and ritual practices, was to be the basis of this mastery of the world.576

574 Ibid., p.234
575 Gregory R Johnson and Dan R Stiver, Paul Ricoeur and the Task of Political Philosophy (Lanham, MD: Lexington Books, 2013), pp.210, 211
The capitalist imaginary, in its current most popular neoliberal ideology, has a long history of domination of nature, the negative impacts of which are now becoming increasingly clear. As Nauser and Steiner note:

>[E]xpressed in a very simple way one could say that existing socio-cultural structures enable or necessitate a kind of agency and associated mental states of the members of the society that is *environmentally destructive* (italics added).\(^{577}\)

Nauser and Steiner suggest that the present ecological crisis indicates that the inner socio-cultural world has become pathologically detached from the outer, biophysical reality, with the result that interactions between humans and the environment have become destructive to both. The enablement and support of such interactions indicated that “the structural relationships between society and environment are incompatible” which they refer to as “overemancipation...to the extent that the further existence of the society concerned is at stake, [this is] one of collective insanity,”\(^{578}\) or as Coffman and Mikulecky put it, “global insanity.”\(^{579}\) So, how does Peirce enable us to see how sanity could be spread as widely as insanity has infiltrated our society?

Douglas Anderson comments on Peirce’s understanding of individual and societal influences, which he defines as “being concerned with the structure and health of the polis or community,” and Anderson observes that Peirce promoted the practical value of philosophy, although wary of philosophy being confined by practical concerns, and also of

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\(^{578}\) Ibid., p.61

\(^{579}\) Coffman and Mikulecky, *Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World*
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philosophical thinking being substituted for practical wisdom. However, Peirce did directly comment on how individual beliefs are shaped by and, in turn, shape societal beliefs, and he stressed the importance of understanding this complex process and therefore understanding how to influence it:

Unless we make ourselves hermits, we shall necessarily influence each other’s opinions; so that the problem becomes how to fix belief, not in the individual merely, but in the community. (CP 5.378)

And, following in the pragmatic tradition of Peirce, Dewey suggested that one of the goals of philosophy should be

…to face the great social and moral defects and troubles from which humanity suffers, to concentrate its attention upon clearing up the causes and exact nature of these evils and upon developing a clear idea of better social possibilities.

To examine this, we need to consider how these ideological underpinnings are created and maintained, and how change might be effected.

In line with our earlier comments about hegemonic power, Peirce noted that the most common way of fixing societal belief has been the use of coercion and force by the state to uphold its own interests and the interests of those supporting it but, as I have mentioned in connection with the acquisition of knowledge, he suggested that the best way to settle differences of opinion is by “conversing together and regarding matters in different lights, [and thereby] gradually develop beliefs in harmony with natural causes” (CP 5.382). However, as noted above, the beliefs of most of us seem to be fixed more by

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ideology than “beliefs in harmony with natural causes.” And if, as Frederick Polak describes it, ideology is “the myth of the dominant class,” then the ideology of the class that is dominant is the ideology that will determine the beliefs of the majority and therefore — particularly in a democratic society — the praxis that will go along with it, which would include the power structures and therefore the actions to maintain the status quo.

So, in an examination of societal and individual transformation, and how ideology impacts us as individuals, we first need to consider the ideas of schema and sign displacement and how these concepts impact our view of the world. To do this, I first begin with a discussion of schema.

Schemata Formed by Semiotic Displacement

The term “schema” was introduced by Kant and later elaborated by others to mean an organised pattern of thought, a mental structure of preexisting ideas, or a mental framework representing some aspect of the world. A schema is a type of internal model which helps an individual to understand the natural world and their place in it, including their social relations with others. Kant proposed the concept in the second part of his Critique of Pure Reason in a chapter titled “Schematism of the Pure Concepts of the Understanding.” The schema is “mediating representation” between appearance and understanding and, as Kant describes it, “The schema is…always…[a] product of the imagination. But…the schema is clearly distinguishable from the image” and he emphasises that, “In truth, it is not images of objects, but schemata, which lie at the foundation of our pure sensuous


conceptions.” Thus, in Kantian terms, our perception is shaped by the schemata that we hold.

The concept of the schema was further developed by Piaget in the early 20th Century with respect to learning and development, and later elaborated to mean an organised pattern of thought, a mental structure of preexisting ideas, or a mental framework representing some aspect of the world. Schemata are used in the formalisation of logic, mathematics, and semantics. In logic, schemata are used to specify the axioms and inference rules of a system. In psychology and cognitive science, “schema” is used to describe an organised pattern of thought or behaviour that is used in the processing of categories of information and the relationships among them. In cognition, schemata influence the attention that is paid to thoughts and sensory phenomena, as well as how likely it will be that new knowledge is rejected or ignored, or assimilated into existing understanding. Therefore, this will impact our individual understanding, behaviour and feelings towards nature.

Schemata have a tendency to be resilient, as they promote a more efficient processing of information, thereby reducing cognitive load and they are therefore of evolutionary value. In an illustration of the way in which our internal models drive our participation in and the shape of the civilisation in which we participate, Douglas suggests that individuals choose which analogies of nature they privilege — an analogy forming a metaphorical model of the world — and thereby choose their allies and opponents and the pattern of their future relations; they — in effect — build shortcuts for thinking and

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decision making on their behalf. This has clear evolutionary benefits from the viewpoint of conservation of cognitive resources as it “turns individual thought to auto pilot” and holds shifting images steady enough for communication to be possible.587

Schemata are, therefore, conceptual models and, as such, Robert Rosen explains, a model is essentially the qualities of a natural system, encoded or represented in some way, just as an ideology is expressed in signs, as I have discussed earlier. Sometimes these qualities are encoded into formal mathematical objects, but often in signs and symbols. These representations, objects or signs, are related through linkage relations, just as the system qualities are in the original system. As the model is an abstraction, the encoding will have to ignore or neglect qualities which are present in the original system. Thus, a model represents a subsystem of the original system, rather than the system itself588 and a model therefore performs a mediation or, in Kant’s terms, “representation” between appearance and understanding as, for example, a schema, which helps to produce understanding by relating appearance to meaning.

Peirce’s thought transforms the Kantian “schema” into a product of both rationality and imagination589 as it becomes part of the habit formation, acting as semiotic interpretant, that I have discussed earlier, with the implication that this interpretant, driven by habit, can be changed. As Peirce states: “[A] habit of feeling which has grown up under the influence of a course of self-criticisms and of hetero-criticisms; and the theory of the deliberate formation of such habits of feeling is what ought to be meant by esthetics” (CP 1.574) As I shall discuss, Peirce’s “interpretant” incorporates the idea of the schema, as a

587 Douglas, How Institutions Think, p.63
type of model of the world, as part of the triadic relationship between the sign and its meaning, and this points the way to change. But let us examine in more detail from where the schema arises by examining it semiotically.

Sign displacement refers to the cognitive process of semiotic constructivism which produces a “schema.” Sign displacement occurs when the Firstness of nature — its phenomena, qualities, feeling and possibilities — is understood through the Thirdness, the order and logic, of culture. Consider how Thellefsen explains sign displacement:

The concept of sign displacement designates the process whereby Firstness understood as nature is perceived through Thirdness understood as culture. The concept of semiotic constructivism designates the way we construct our understanding of the world inside the category of Thirdness (culture).\textsuperscript{590}

In Peircean terms a sign displacement is the semiotic gap between a representamen and a sign.

A sign is anything which conveys a specific idea of an object in any way and a representamen is the object which is signified by the sign. A sign only exists as a sign when it is in a triadic relation with an object and an interpretant. However, the representamen does not participate in this relationship, as it expresses generality and possibility — as in Firstness — whereas a sign is a concrete interpretation of the representamen. Before it is interpreted, the representamen is a pure potentiality: a First.\textsuperscript{591} As an example of displacement, we understand nature as something which is very general and capable of expression in limitless ways, but a person is a concrete and specific aspect of nature. Culture, as


Thirdness, creates and maintains our understanding of nature and this understanding will always be displaced from nature. However, our understanding of nature can change and evolve, as the sign can change independently of the representamen, although the representamen will always be part of the sign (CP 1.540-542).

The process of semiosis involves a triadic relationship between a sign or representamen (a first), an object (a second) and an interpretant (a third). When a representamen is interpreted, it may trigger an interpretant, which in turn becomes a representamen by triggering another interpretant referring to the same object as the first representamen. As an example, consider the definition of a word in a dictionary as an interpretant of the word, because the definition refers to the object (in this case, what the word represents) and thereby allows the representamen (the word) to refer to this object. But in order to be understood, the definition itself requires a group of other interpretants (other definitions). Thus, the process of semiosis is theoretically unlimited, always incomplete and ongoing. However, it is limited in practice, being bounded by time, but more especially by habit.

As Peirce explains, we exhibit, as does all of the universe, the “tendency to form habits” (CP 8.317), which is enabled by the effect of previous signs in also forming habits. In practical terms, this becomes a constraint to the process, and causes the exit from the interpretive recursion, this allowing participants in the semiotic dialogue to reach a needed consensus, but it can also be destructively restrictive by causing an exit from the recursive process too soon. In our discussions of ideologies as forming, influencing and maintaining the internal models or “schemata” that we use to interpret the world, I argue that the model becomes, in Peircian terms, an interpretant — or a series of interconnected interpretants — with its application driving the exit from the semiotic process at a particular
point. This process, as I have mentioned, is driven by both reason, experience and imagination.\(^{592}\)

But let us consider how this understanding enables us to see how changes in ideology can take place.

### The Fixations of Ideology

As I have discussed, ideology can be examined semiotically. As I have mentioned, Vološinov observes that “Everything ideological...is a sign. Without signs, there is no ideology.”\(^{593}\) And the importance of making explicit the hidden semiotic distortions in ideology is highlighted by Nöth’s comments that

> Ideological connotations are hidden and want to remain concealed to become inaccessible to criticism. The ideological connotations hidden in the mass media aim at making social structures appear natural and inevitable in order to conceal their arbitrariness and conventionality.\(^{594}\)

And as Vološinov suggests,

> …[the] very same thing that makes the ideological sign vital and mutable is also, however, that which makes it a refracting and distorting medium. The ruling class strives to impart a supraclass, eternal character to the ideological sign, to extinguish or drive inward the struggle between social value judgments which occurs in it, to make the sign uniaccen-
tual.\(^{595}\)

In other words, this process fixes and narrows its meaning in line with the vested interests of what Vološinov calls “the ruling class.” The meaning that is given to the natural world will be that which supports the dominant neoliberal ideology.

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\(^{592}\) Rosenthal, "Schemata and Semiotic Structure"

\(^{593}\) Vološinov, *Marxism and the Philosophy of Language*, pp.9, 10

\(^{594}\) Nöth, "Semiotics of Ideology", p.16

\(^{595}\) Vološinov, *Marxism and the Philosophy of Language*, p.23
Terry Eagleton’s comments on ideology echo our earlier analysis of Peircian semiotics as it applies to the tendency to exit the interpretive recursion of semiosis early, which allows participants in the semiotic dialogue to reach a needed consensus, but in this case Eagleton identifies ideology as the form of ‘habit taking’ (in Peircian terms) which drives this process:

Ideology is essentially a matter of ‘fixing’ the otherwise inexhaustible process of signification around certain dominant signifiers, with which the individual subject can then identify. Language itself is infinitely productive; but this incessant productivity can be artificially arrested into ‘closure’ — into the sealed world of ideological stability, which repels the disruptive, decentred forces of language in the name of an imaginary unity. 596

And he goes on to describe the power and secrecy of this attempt to fix the signs:

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Signs are ranked by a certain covert violence into rigidly hierarchical order; as…ideological practice…works to fix the subject in certain positions in relation to certain fixities of discourse.

The process of forging “representations” always involves this arbitrary closing off of the signifying chain, constricting the free play of the signifier to a spuriously determinate meaning which can then be received by the subject as natural and inevitable (italics added).597

Thus, our dysfunctional relationship with the rest of the natural world is not even seen as problematic by most people; which is exactly what is desired by those that support its exploitation to their own ends. This combination of lack of awareness of the problem —

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597 Ibid., p.196
and a failure to value it once aware — forms the basis of the ethical transformation that is needed.

Peirce provides an explanation for how this process of semiotic distortion or sign displacement operates. One of Peirce’s notable insights is that feeling (Firstness) has a tendency to become spread out continuously, and impact other feelings. During the spreading the feeling loses its intensity and force, which means the force to affect other ideas; however, it gains in generality and becomes more entrenched into the rigidity of habits (EP 1.291). As Bent Sørensen et al. suggest, the mind — rational and reasonable activities — almost disappears, and ideology takes its place. However, as Potter notes when discussing the Peircean conditions for human participation in rendering the universe more reasonable, we can cooperate in the process of evolution, deliberately controlling our own actions and influencing the society of which we are members. We can also relate this process to ideological change.

Thellefsen notes that signs which are part of the Thirdness trichotomy are all rooted in culture and are therefore signs that are displaced from Firstness. As Thellefsen explains: “displacement is the representamen’s (nature’s) way to the object (man) mediated through the interpretant (the culture).” He also points to Peirce’s contention that Thirdness is a category of habits and habits tend to become subconscious, and Thirdness begins its regress to Firstness. The impact this has on all of our thinking is stressed by Thellefsen, when he explains that

…this interaction of Firstness and Thirdness creates and shapes our ability to cognize, and the process of cognition creates the mental space, which I call the perceptionsphere

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598 Sørensen, Brier and Thellefsen, “Cosmos and Creativity: Man in An Evolving Universe As a Creative, Aesthetical Agent — Some Peircean Remarks”
599 Potter, Charles S. Peirce on Norms & Ideals, p.202
which arise as a result of the sign displacements. The perceptionsphere designates the room for human cognition. So the basic epistemological thoughts of perception are in fact the displacements of Firstness and Thirdness.\(^{600}\)

Considering how the triadic nature of Peircian semiosis enables multiple interpretations of the same sign, we may notice an echo of Vološinov’s contention that

…each living ideological sign has two faces, like Janus. Any current curse word can become a word of praise, any current truth must inevitably sound to many other people as the greatest lie. This inner dialectic quality of the sign comes out fully in the open only in times of social crises or revolutionary changes.\(^{601}\)

Each of the three terms of semiosis (representamen, object and interpretant) is further subdivided by Peirce into the following three trichotomies:

…first, according as the sign in itself is a mere quality, is an actual existent, or is a general law; secondly, according as the relation of the sign to its object consists in the sign’s having some character in itself, or in some existential relation to that object, or in its relation to an interpretant; thirdly, according as its Interpretant represents it as a sign of possibility or as a sign of fact or a sign of reason (CP 2.243).

Thellefsen suggests that the first trichotomy, the pre-perceptive signs, (Qualisign, Sinsign and Legisign) can be seen as signs of nature, the second trichotomy, the perceptive signs (Icon, Index and Symbol), as signs of humans or human cognition, and the third dichotomy (Rheme, Dicisign and Argument), as signs of culture.\(^{602}\) Above, Peirce refers to “a sign of reason” or an argument, refers to a a sign interpreted at the level of thirdness; it formulates the rule joining the representamen to its object. This “rule” is that established by the force of habit, expressed in natural laws or cultural norms.\(^{603}\) But just as habits can

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\(^{600}\) Thellefsen, "Firstness and Thirdness Displacement - the Epistemology of Peirce’s Three Sign Trichotomies"

\(^{601}\) Vološinov, *Marxism and the Philosophy of Language*, p.23

\(^{602}\) Gare, "The Semiotics of Global Warming: Combating Semiotic Corruption", p.6

\(^{603}\) Everaert-Desmedt, "Peirce's Semiotics"
be reinforced by the semiotic process, they can also be changed. And in considering how this occurs, let us examine the concepts of Field and Habitus.

Fields of Significant Change

Bourdieu built on the idea of the schema to develop his interrelated concepts of “Habitus” and “Field.” Habitus is defined by Bourdieu as a collection of...

…systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organise practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to obtain them.  

Thus, the habitus forms a self-maintaining system, self-regulating for generating outcomes, and it echoes Peirce’s conception of the universal tendency to “form habits,” with the actions themselves becoming semiotic interpretants. With regard to these “habits,” Bourdieu continues:

Objectively ‘regulated’ and ‘regular’ without being in any way the product of obedience to rules, they can be collectively orchestrated without being the product of the organising action of a conductor.

Bourdieu defines a Field as

…a network, or configuration, of objective relations between positions. These positions are objectively defined, in their existence and in the determinations they impose upon their occupants, agents or institutions, by their present and potential situation (situs) in the structure and distribution of species of power (or capital) whose possession commands access to the specific profits that are at stake in the field, as well as by their objective relation to other positions (domination, subordination, homology, etc.).

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605 Ibid., p.53
These concepts well describe how social structures generate and sustain particular ideas and behaviours on an individual and a societal level. As Gare observes,

> Bourdieu [has] identified a form of embodied belief which is neither fully conscious nor unconscious, and [has] seen that part of this belief is in the reality of the socially constituted fields within which people are acting and striving for ‘capital’ or power. It is acting on this basis that the field is continually reproduced and developed.\(^607\)

Thus, a destructive framework can be maintained, and even strengthened, regardless of its toxic effects. But how can inter-field activity be understood and what is its importance in the maintenance and change of ideological views?\(^610\)

Neil Fligstein and Doug McAdam build on Bourdieu’s idea of “fields” to describe how fields are maintained by the competitive and cooperative interaction between different fields, as well as between the actors within the fields. As they note, there is always something of value at stake in a particular field and the actors in the field are striving to control it.\(^608\) They coined the phrase “strategic action fields” to describe mid-level social orders, which they see as the “basic structural building block[s] of modern political/organisational life in the economy, civil society, and the state.”\(^609\) This is similar to Bourdieu’s conception, but they also discuss how fields need to be considered as embedded within a network of other fields and states, which form systems of strategic action fields. Their work examines not only how actors operate within existing fields but also the circumstances under which they are able to “resist structures and create alternate worlds,” thereby changing the relationships between and within the fields, and thereby enabling entire fields and their outcomes to change.

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\(^607\) Gare, “The Semiotics of Global Warming: Combating Semiotic Corruption”, p.21  
\(^609\) Ibid., p.3  
\(^610\) Ibid., p.6
While recognising the role of power relationships in the dynamics within and between fields, Fligstein and McAdam emphasise that strategic action is grounded in the “human capacity and need (italics in original) to fashion shared meanings and identities to ensure a viable existential ground for existence,” and adherence to an ideology is surely one of the most effective ways to achieve this. This fixes a field even more firmly, as there are, therefore, both existential and instrumental reasons for maintaining a strategic action field. But, as Fligstein and McAdam observe, “[nothing] poses a greater threat to our beliefs than a conscious awareness of the existential motives underlying them.” This has a big impact on individuals and on society.

Threats to our image of society and our place in it produce great stress and this, along with the fact that we want to feel part of a meaningful world, renders us highly susceptible to social influence. But this means that the same forces that help to maintain fields can also cause them to change, and therefore fields can and do change, sometimes radically, and entirely new fields can come into existence. Under what conditions, though, does change arise? Let us return to field theory as articulated by Bourdieu, and see how it helps us to understand how changes in fields occur.

Aspects of a field, according to Bourdieu and Loïc Wacquant, include the position of the field with relation to the broader field of power, the agents and institutions in the field and the relations between them, and the habitus of the agents, that is, the dispositions, values and expectations they possess. Of course, there is a continual struggle between agents within fields, jockeying for advantage and shifting positions incrementally to

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611 Ibid., p.18
612 Ibid., pp.43, 44, 56
613 Bourdieu and Wacquant, An Invitation to Reflexive Sociology, pp.104, 105
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maintain or increase power, and all these aspects are subject to minor change. But radical change only occurs under extreme circumstances, generally due to external influences that come from another, interrelated field.

In these rare cases, certain aspects of the field, identified by Fligstein and McAdam as its reason for existence, including its composition, the legitimacy (or otherwise) of various forms of action within the field, and the shared world views (or schemata) of the actors, are all subject to change; change that can be transformative. Once the field has been transformed, however, or even has been dissolved and a new field produced, stability is imposed by the coalescence of the field by means of the institutionalisation of power structures and rules. Fligstein and McAdam refer to this as “punctuated equilibrium,” a term also used with relation to the process of change through organic evolution. But what are the conditions for a new field to be formed, or an existing one maintained?

Fligstein and McAdam suggest that there has to be a broad, although individually interpreted consensus around four issues. First, a shared understanding of the reason for the existence of the field, its general operation, and what about the field is of value to the agents. Second, there needs to be a mutual recognition by the major actors in the field, and a shared understanding of their role and power relations. Third, the actors in the field need to have a common cultural understanding of the actions and forms of organisation that are legitimate within the field. Finally, there needs to be a broadly shared schema that enables the actors to understand each other, their respective actions and their role in the

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614 Fligstein and McAdam, *A Theory of Fields*, p.84
field.\textsuperscript{616} And as I have argued, ideology provides that shared schema, embodied as habitus, as a form of model that reflects and shapes our understanding of the world.

So let us now consider the idea of our current society as a “system society” and how it is possible to move to a more “social society” in line with the importance of seeing relationships as vital to an ecological civilisation.

\textsuperscript{616} Fligstein and McAdam, A Theory of Fields, p.88
Chapter 14: The Relationships of a Social Society

In this chapter I explain how the ethics that underly the dominant neoliberal ideology have produced a “system society,” whereas what is needed to support the transformation outlined in this project is a “social society.” A system society is one that is based on a distorted and constricted understanding of rationality, which gives primarily place to instrumental reason in defining the relationships that I have with each other and with the rest of nature. The social society recognises the importance of relationships in themselves, rather than as a means to an end, and this type of society therefore acknowledges sentience, agency and community as widespread in the natural world, not confined to humanity. This will help us not only to understand but also to feel ourselves as part of an “ecology of selves.”

The Rise of the “System Society”

IN LINE WITH OUR assertions about the reductionist, mechanistic, and exploitative view of other humans and the rest of the natural world that is a result of the pervasiveness of dualistic thinking, Steiner observes that we now live in a “system” society. This is primarily due to our mode of communication, as it changes from direct contact to an expanded network that operates through intermediaries — be they other persons or electronic “social media.” He explains:

…the integrative media holding a human society together turn from an originally exclusively social type into a predominantly system type. Social integration, the only means of integration in archaic societies, involves direct face-to-face contacts and is associated with
situations of love (sexual or otherwise), sharing, cooperation, rituals, etc. In contrast, system integration occurs in an anonymous way via indirect relations, possibly over several relational links, between people who more often than not never see each other.  

This is similar to the description I have cited earlier, where Habermas, refers to a “rationalisation” processes whereby communal social action is replaced with with activities regulated solely by rationality. As I have mentioned previously, this supports our currently dominant ideology and those who benefit from it. As Steiner continues:

Its medium in political societies is primarily power, in the economic society money. System integration enables the coordination of an increasing number of people, but only at the cost of growing anonymity with associated irresponsibility, that is, irresponsibility is almost unavoidable under the circumstances even with the best of intentions.

And in a similar vein, Buckminster Fuller wrote in 1975:

Specialization has bred feelings of isolation, futility, and confusion in individuals. It also resulted in the individual’s leaving responsibility for thinking and social action to others. Specialization breeds biases that ultimately aggregate as international and ideological discord, which, in turn, leads to war...

In the 40 years since that was written the situation has not improved.

This insulation and separation from the physical ground of our being is also a form of detachment from space and time, and the social structures become more important than the environment — at least in the short term. Although, as Gunderson suggests,
these characteristics of our social systems have enabled us to anticipate the global impact of climate change, they have also made it more difficult for us to respond to this impact. Also, the technological systems, which are usually constructed to focus on a particular problem in a particular temporal and spatial location and scale, create new problems in other spaces and times. For example, the pesticide that is designed to address a problem with an infestation within a crop cycle, finds its way into water tables and creates issues for future generations of humans and other species. As Gunderson et al express it, using an apt metaphor, ecosystems are like sunlight, a complex polychromatic illumination, whereas human technological solutions are usually just a stark monochrome.\(^{622}\)

However, as Gunderson et al. describe it, ideology causes us to “place our feet firmly in midair,” somehow detached from the grounded reality of nature. And our current dominant ideology of neoliberalism has undermined long-standing institutions, and paved the way for a lack of resistance to these changes which have cemented the role of contractual relations as a substitute for human relations. Harvey refers to “Lyotard’s famous description of the postmodern condition as one where ‘the temporary contract’ supplants ‘permanent institutions in the professional, emotional, sexual, cultural, family and international domains, as well as in political affairs.’”\(^{623}\) Nauser supports this view as he refers to the terminology of Anthony Giddens in suggesting that the media holding a human society together turn from a social to a system orientation. Social integration involves direct

\(^{622}\) Ibid., p.118
\(^{623}\) Harvey, *A Brief History of Neoliberalism*, p.4
human contacts. In contrast, system integration occurs through indirect relations, mediated by power and money.\textsuperscript{624} This lack of individual relations leads to growing anonymity and associated irresponsibility, but how can we examine this from a viewpoint of ethics?

As mentioned previously, Harvey defines neoliberalism as follows:

Neoliberalism is...a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade....[I]f markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) then they must be created, by state action if necessary.\textsuperscript{625}

Apart from this role of creating markets where needed, neoliberalism assigns the state a strictly limited function

…to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence, police, and legal structures and functions required to secure private property rights and to guarantee, by force if need be, the proper functioning of markets.\textsuperscript{626}

And because of this, Harvey describes neoliberalism as valuing

market exchange as an ethic in itself, capable of acting as a guide to all human action, and substituting for all previously held ethical beliefs.\textsuperscript{627}

What impact does this view of “market exchange as an ethic in itself” have on society?

\textbf{The Corruption of Human Dignity}

\textsuperscript{624} Steiner, "Human Ecology As Transdisciplinary Science, and Science As Part of Human Ecology", p.482
\textsuperscript{625} Harvey, \textit{A Brief History of Neoliberalism}, p.3
\textsuperscript{626} Ibid., p.3
\textsuperscript{627} Ibid., p.3
This ethic of market exchange obviously impacts the ethical structures of society, supplanting the relationships that exist in archaic societies that tend to be relationships of respect and recognition with the components of environment, not only plants or animals but also rivers, forests, mountains and other parts of the landscape. There are many positives in our recognition of individual and political freedoms and rights, but this has led to a rise in personal relativism, with little awareness of collective responsibility. Steiner and Nauser suggest that this has led to the economy now occupying the ‘sacred’ level once reserved for religion and “by so doing dominates the whole society in such a way that the other parts of it are at its service instead of the other way round.”628 This is somewhat how Peirce expressed it as from the viewpoint of his own religious beliefs:

> Here, then, is the issue. The gospel of Christ says that progress comes from every individual merging his individuality in sympathy with his neighbors. On the other side, the conviction of the nineteenth century is that progress takes place by virtue of every individual’s striving for himself with all his might and trampling his neighbor under foot whenever he gets a chance to do so. This may accurately be called the Gospel of Greed. (CP 6.294)

This structure is supported by what Polak calls “a new managerial caste,” comprised of “half-barbarians,” who provide leadership in government, commerce, and politics. As Polak notes these “specialist[s have] difficulty in focusing on the far horizon, and conservative thinking flourishes in the managers’ bureaucracy” and they “themselves operate within increasingly limited mental horizons.”629

Rik Pieters, drawing on earlier research from Barry Schwartz, notes that emphasis given to clusters of “self-enhancement values,” such as those that are fulfilled by pleasure-seeking, will conflict with values based on self-transcendence, which include benevolence

628 Steiner, “Human Ecology As Transdisciplinary Science, and Science As Part of Human Ecology”, p.483
629 Polak, The Image of the Future, pp.296, 297
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and universalism, and with values that are primarily social, focussing on relationships with others in family and community. Research in many countries suggests that “attaching high importance to a particular value also decreases the importance of conflicting values and deactivates the behaviors associated with those [values].”\textsuperscript{630}

However, what is the current situation with regard to our relationship with the “others” in the community of the biosphere? Markley notes that the way we see ourselves in relationship to the other communities in the biosphere drives the way we act towards those communities,

If we see ourselves as separate from or superior to nature, then an exploitation ethic can be fostered more easily. If we see ourselves as a part of or one with nature, then an ecological ethic can be fostered more easily. If we view human beings (e.g. in medicine, employment, architecture) as animated machines of physical parts, then non-physical aspects of our existence are likely to be ignored. If we view humans as solely spiritual rather than physical beings, then material aspects of our existence are likely to be ignored, e.g. in public health, employment opportunities, housing. If human nature is seen as complete and fixed, then our task is to adapt ourselves and our institutions to enhance that development.\textsuperscript{631}

From a Peircian viewpoint the replacement of all types of relationships with a relationship of the individual to the market seems to be a total replacement of Firstness and Secondness by Thirdness, in other words the usurpation of feelings and ethics by contracts. Is it possible, though, to begin to change society by reconsidering relationships as central to its structure? Fuller in a continuation of his previously quoted words, suggests that it is, but

\ldots only a comprehensive switch from the narrowing specialization and toward an ever more inclusive and refining comprehension by all humanity — regarding all the factors

\textsuperscript{630} Pieters, “Bidirectional Dynamics of Materialism and Loneliness: Not Just a Vicious Cycle”, p.616
\textsuperscript{631} Markley and Harman, Changing Images of Man, p.1
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governing omnicontinuing life aboard our spaceship Earth — can bring about reorienta-
tion from the self-extinction-bound human trending, and do so within the critical time
remaining before we have passed the point of chemical process irretrievability.632

As Fuller suggests, we change society by reconsidering relationships as central to its struc-
ture. To determine how this could be done, let us return to Peircian Firstness as a foun-
dation for ethics and therefore a rationality that supports relationships as fundamental to
societal flourishing.

As mentioned previously, Peirce’s categories indicate that Thirdness, which charac-
terises such contributions to societal order as legislation, mediation and law — and a con-
tract would certainly fit into this category — stems from Secondness, which includes eth-
ics and evaluation, and ultimately from Firstness, which includes pure unevaluated feel-
ings, aesthetics and phenomena. Casting all relationships in terms of contracts bypasses
instances of Firstness and Secondness with an encapsulated Thirdness based on a set of
assumptions about human relations and, in effect, outsources moral decisions to the mar-
et.

In examining the pervasion of market-driven thinking into more and more areas of
life, Michael Sandel, while arguing that not every good should be available to be bought
and sold, notes that in some situations “the monetary exchange spoils the good being
bought” and in others, “the good survives the selling but is arguably degraded, or cor-
rupted, or diminished as a result.”633 Sandel provides the example of children being paid
to read books and suggests that this devalues the experience of reading, as it casts its
benefits in monetary terms. As Sandel observes, “To a remarkable degree, the last few

632 Fuller, Synergetics: Explorations in the Geometry of Thinking, p.xxv
Straus, Giroux, 2012), p.49
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decades have witnessed the remaking of social relations in the image of market relations.”634

One of the other reasons for the rapid (some would say rabid) rise of neoliberalism, according to Harvey, is that it

…appeals to our intuitions and instincts, to our values and our desires, as well as to the possibilities inherent in the social world we inhabit. The founding figures of neoliberal thought took political ideals of human dignity and individual freedom as fundamental, as ‘the central values of civilization.’ In so doing they chose wisely, for these are indeed compelling and seductive ideals.635

If notions of “human dignity and individual freedom” have been made subject to the market then, indeed, they have been “degraded,...corrupted, [and] diminished.” So let us consider what we can learn from previous modes of interaction with fellow humans and with the natural world, as I return to an examination of Peirce’s Firstness.

The Sensual Experience of Nature

Our dysfunctional relationship with the rest of nature would seem to be, as I have argued, a relatively recent phenomenon in the history of humanity. Abram writes with regard to ancient human’s encounters with the natural world: “Every sound was a voice, every scrape or blunder was a meeting — with Thunder, with Oak, with Dragonfly.”636 This echoes the “speech” of nature I have discussed previously, and as Abram later writes:

Language as a bodily phenomenon accrues to all expressive bodies, not just to the human. Our own speaking, then, does not set us out side of the animate landscape but —

634 Ibid., p.51
635 Harvey, A Brief History of Neoliberalism, p.5
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whether or not we are aware of it — inscribes us more fully in its chattering, whispering, soundful depths.\(^{637}\)

He emphasises the sensual and relational aspect of that “meeting,” as he notes, “Humans are tuned for relationship. The eyes, the skin, the tongue, ears, and nostrils — all are gates where our body receives the nourishment of otherness.” How important is that appreciating of sensuality for our relationship with the rest of the natural world? Abrams suggests it is not only having a relationship that is important, but also having a relationship that has warmth and empathy:

Today we participate almost exclusively with other humans and with our own human-made technologies. It is a precarious situation, given our age-old reciprocity with the many-voiced landscape. We still need that which is other than ourselves and our own creations. …[W]e are human only in contact, and conviviality, with what is not human.\(^{638}\)

Drawing on the work of Dewey, Browne speaks to the central role of experience in understanding the natural world. He notes that the core of experience is interaction and interrelatedness, leading to knowledge through inference, an interaction always embedded in the physical. The meaning of experience occurs through the perception of relations, especially among the organism and its environment. He suggests that the relation between experience and meaning is that experience occurs effortlessly, “like drawing a breath,”\(^{639}\) but to make experience meaningful conscious effort is needed. Dewey gives the following example:

It is quite possible to enjoy flowers in their colored form and delicate fragrance without knowing anything about plants theoretically. But if one sets out to understand the flowering of plants, he is committed to finding out something about the interactions of soil, air, water, and sunlight that condition the growth of plants.\(^{640}\)

\(^{637}\) Ibid., p.80
\(^{638}\) Ibid., p.80
\(^{639}\) Browne, The World in Which We Occur: John Dewey, Pragmatist Ecology, and American Ecological Writing in the Twentieth Century, pp.10, 12
\(^{640}\) Dewey, Art As Experience, p.9
Thus, it is the perception of the connection, including our knowledge of the plant’s relations through its ecology, which contributes to the meaning of the experience. Further shedding light on the importance and complexity of experience, Browne quotes Thomas M. Alexander:

The material out of which human life is built is ‘experience,’ understood in its Deweyan sense as that vast concurrence of natural events and cultural meanings in all their obscurity and power as well as in their focal clarity and luminosity (italics added).

In a dualistic world, experience is kept separate from meaning, so how is it possible to restore this integrity to experience of the natural world, to create what we might term “a new experience” of the world — which actually restores the experience of the world that pre-modern society may have had?

Bakhtin discusses the creation of an experience of the world built on a “new relationship to nature.” Angela Last cites Bakhtin’s words as he describes this experience as “[encompassing] relations: not to the little nature of one’s own corner of the world but to the big nature of the great world, to all the phenomena of the solar system, to the wealth excavated from the earth’s core, to a variety of geographical locations and continents.” Last suggests that Bakhtin finds that human awareness needs to stretch further than one’s immediate surroundings, in order to understand one’s situatedness: In great experience the world does not coincide with itself (it is not what it is), it is not closed and not finalized. In it there is memory that does not have borders, memory that descends and disappears into the pre-human depths of matter and inorganic life, the experience of the life of worlds and atoms.

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642 Angela Last, “Negotiating the Inhuman: Bakhtin, Materiality and the Instrumentalization of Climate Change”, *Theory, Culture & Society*, 30, no. 2 (2013): 60-83
This describes a world of connections; connections of humanity with the rest of nature; connections that cannot be ignored if we are to be truly aware of our relationship with all of the natural world, living and non-living. However, under the dualistic view of nature that dominates today, even the language that puts humans as “in” the ecosystem or the environment is problematic. As Morton notes, “the language of embeddedness insists that we are up close and personal with reality, [but] the attitude it codes for is cosy, vicarious, aesthetic distance.” In contrast, Morton appropriates the term “mesh” to show the interconnectedness of all life at all levels, and notes

‘Mesh’ can mean both the holes in a network, and the threading between them. It suggests both hardness and delicacy. It has uses in biology, mathematics and engineering, and in weaving and computing — think stockings and graphic design, metals and fabrics. It has antecedents in mask and mass, suggesting both density and deception. By extension, ‘mesh’ can mean ‘a complex situation or series of events in which a person is entangled; a concatenation of constraining or restricting forces or circumstances; a snare.’ In other words, it’s perfect.\(^{643}\)

What this analogy achieves is to demolish “the ecological thought” by recognising that there is no real distinction between the organism and its environment.

In further opposition to the current view of relationships in the natural world, Buchanan calls on the ideas of Deleuze in challenging the ideas of the “organism” as a “contained, stable, and self-same entity,” referring to the processual and interdependent aspects of all life, and moving away from a static view of being to one where life rests on a continual state of becoming. Buchanan suggests that organic bodies can be seen as emerging from a “coagulating process of condensation” and he refers to Manuel De Landa, who notes that “our organic bodies are...nothing but temporary coagulations in these flows.”\(^{644}\)

\(^{643}\) Morton, *Thinking Ecology: The Mesh, the Strange Stranger, and the Beautiful Soul*, p.278
\(^{644}\) Buchanan, *Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze*, p.168
Deleuze also highlights how Uexküll, in the example of the tick which discerns only light, heat and a particular scent, demonstrates how an animal can be defined by the affects of which it is capable.\footnote{Ibid., p.156}

Supporting Deleuze’s statement that “What a body can do corresponds to the nature and limits of its capacity to be affected” and eschewing even the word “organism,” Buchanan suggests that “the capacity to affect and to be affected is what constitutes the individuality of each particular thing.”\footnote{Ibid., p.158} Interestingly, this redefinition of the individual does not preclude the importance of relations in life. Buchanan suggests that these enable the formation of “higher” individuals, such as the plant, through its relations with soil compositions, solar energy, other plants, birds, animals, insects and more, which becomes then part of a garden, a forest, an ecosystem, and these become bodies themselves, with their own set of “affections.”

In\textit{ Difference and Repetition} Deleuze states that, “A living being is not only defined genetically, by the dynamisms which determine its internal milieu, but also ecologically, by the external movements which preside over its determination within an extensity.”\footnote{Gilles Deleuze,\textit{ Difference and Repetition}, trans. Paul Patton (London; New York, NY: Continuum, 2001), p.216} This supports Buchanan’s notion that environments, packs, species, and other “higher individuals” are truly individual entities — at least as much as the traditionally defined individual organism. With regard to our own place in “nature,” can we see ourselves as organisms which are neither static, nor bounded entities, but permeable objects that are formed through relations? These relations can be considered as a series of differentiations that accumulate genetically but, if considered ecologically, can be viewed as relations between
more extensive entities — in fact, with no limit. Goodwin notes how this changes our view of all organisms:

The consequences of this altered perspective are considerable, particularly in relation to the status of organisms, their creative potential, and the qualities of life. […] It is relational order among components that matters more than material composition in living processes, so that emergent qualities predominate over quantities. This consequence extends to social structure, where relationships, creativity, and values are of primary significance. But the importance of relationships is even greater than this. It extends to our very existence as organisms.

An “Ecology of Selves”

Wheeler suggests that relationships that allow us be part of a community are not only the basis of our humanity, but the basis of our existence as living entities, when she observes that

…sociality can be seen as firmly rooted in an account of evolution that sees it as a process of symbio-genetic co-operative communication (from the cell all the way up), with the consequent emergence of more complex levels of life. She suggests that

…while each and every one of us is manifestly an individual, whose life and wellbeing matters, humans and their wellbeing are not most fully understood unless the fundamentally social nature of human existence is properly taken into account. This — our fundamental sociality — is lived in our inner, as well as outer, world; and it is emotional as well as physical; and all this — our essential social being — is written on our bodies in terms of flourishing or (its opposite) illness.

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648 Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.174
649 Goodwin, How the Leopard Changed Its Spots: The Evolution of Complexity, p.xvi
651 Ibid., p.13
However, this is not confined to the human realm, as she suggests that “human beings have a natural generative field beyond which they will not prosper” and then adds that “the environment really is socio-cultural too” and that

...[to] the natural generative field, we must also add the idea of the biosemiotic sphere, being richly connected in many relationships with one’s fellows, being able to influence events around you, having an abundance of both natural and social resources in other words, creates flourishing emotional and physical health. But change that field – create steep hierarchies in which many feel profoundly limited and disempowered – and such human beings will not flourish, will become ill, and will die earlier.  

As Michael Fuller notes,

...it is further emphasised by both Aristotle and Aquinas that this greatest good is also the common good and can only be achieved in the company of others: ethics is inseparable from politics, individual virtues from the civic virtues and from tradition bound practices.

But this does not mean a totally harmonious relationship, as “both parties...should also be considered adversaries: to act and to be involved in dialogue does not mean there are no asymmetric power relations or desires of actors to ‘triumph’ over one another.”

As Capra observes,

In every community there will invariably be contradictions and conflicts, which cannot be resolved in favor of one or the other side. For example, the community will need stability and change, order and freedom, tradition and innovation. Rather than by rigid decisions, these unavoidable conflicts are much better resolved by establishing a dynamic balance. Ecological literacy includes the knowledge that both sides of a conflict can be important, depending on the context, and that the contradictions within a community are signs of its diversity and vitality and thus contribute to the system’s viability.

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652 Ibid., pp.12, 13
653 Michael B Fuller, Making Sense of MacIntyre (Aldershot: Ashgate, 1998), p.8
654 Last, “Negotiating the Inhuman: Bakhtin, Materiality and the Instrumentalization of Climate Change”, pp.66, 69
655 Capra, The Web of Life: A New Scientific Understanding of Living Systems, p.303
But let us consider in more detail our relationships as humans with others in the biosphere, and how these relationships can be transformed in light of the application of Peirce’s ideas.

Kurt Goldstein, in an essay about the encounter that occurs between a mother and her infant child, expresses the importance of connection to others in our self-realisation as individuals. He says that,

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\text{…man can never realize himself unless the existence of the other is guaranteed. This reveals that ultimately the concern for the other’s existence is an intrinsic property of man’s nature, and that man is not to be understood in his characteristic uniqueness among all other living things without a consideration of his belonging together with the “other.”}^{656}
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Goldstein explains that this is not just a case of needing the support of others in the world, but that we are defined by our relationships with others, and the depth and importance of these relationships are shown by the strength of the emotion that they elicit. He explains that this

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\text{…presents itself in the appearance of joy (essentially different from pleasure) which reveals itself as a characteristic experience for human existence as early as in the smiling of the infant in primitive form.}^{657}
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Although Goldstein is discussing a specific type of encounter between humans, I will attempt to establish that this connection between humans and other inhabitants of the biosphere is just as emotionally charged, and just as vital to our flourishing as humans.

Gilles Deleuze and Felix Guattari provide a striking analysis of the need to view all elements of our ecosystem as interconnected and interdependent. They talk about haecceity, the unique and discrete qualities of an individual, and express it this way:

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657 Ibid., p.191
We must avoid an oversimplified conciliation, as though there were on the one hand formed subjects, of the thing or person type, and on the other hand spatiotemporal coordinates of the haecceity type. [...] You are longitude and latitude, a set of speeds and slownesses between unformed particles, a set of nonsubjectified affects. You have the individuality of a day, a season, a year, a life (regardless of its duration) — a climate, a wind, a fog, a swarm, a pack (regardless of its regularity). 658

They go on to speak of what we might express as the connectedness of our individuality:

It should not be thought that a haecceity consists simply of a decor or backdrop that situates subjects, or of appendages that hold things and people to the ground. It is the entire assemblage in its individuated aggregate that is a haecceity… It is the wolf itself, and the horse, and the child, that cease to be subjects to become events, in assemblages that are inseparable from an hour, a season, an atmosphere, an air, a life.

The street enters into composition with the horse, just as the dying rat enters into composition with the air, and the beast and the full moon enter into composition with each other. [...] Climate, wind, season, hour are not of another nature than the things, animals, or people that populate them, follow them, sleep and awaken within them. 659

And as Buchanan asks, “Where, in other words, does the subject begin or end, and likewise the environment?” 660 I argue here that there is no “beginning and end” between humans and the environment, but that we are part of a community of subjects, an “ecology of selves.” As McDonald suggests, after Dewey:

Human nature exists and operates in an environment...as a plant is in the sunlight and soil. It is of them, continuous with their energies, dependent upon their support, capable of increase only as it utilizes them and as it gradually rebuilds from their crude indifference an environment genially civilized. 661

Further to this, it may be argued that no organism, environment, or combination exists as a purely objective, isolated entity. Uexküll cites Sombart as saying,

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659 Ibid., p.202
660 Buchanan, *Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze*, p.42
No “forest” exists as an objectively prescribed environment. There exists only a forester-, hunter-, botanist-, walker-, nature-enthusiast-, wood gatherer-, berry-picker- and a fairytale-forest in which Hansel and Gretel lose their way. The meaning of the forest is multiplied a thousandfold if its relationships are extended to animals, and not only limited to human beings. 662

So, if we cannot speak with real meaning of any “objectively prescribed environment,” which includes the relationships inherent in it, how can we have meaningful dialogue about our own relationships with the rest of nature if we see it as separate from ourselves? Uexküll refers to “the web of life,” a network of relationships that provide opportunities for and constraints on the individuals and communities that form this web. We need not only to understand, but also to feel the truth of the assertion that the health of the individual is partly the result of constraints placed upon it by the web or relationships in which it participates. As Uexküll explains the entanglement that our current dualistic perspective can never fully grasp:

[F]rom the standpoint of the individual…, both community and species impose on it restrictions that are antagonistic to it as an individual. In the same way, also, from the standpoint of the species-impetus we feel the embarrassing restraints that the demand of the individual and of the community lay upon that. The same if true of the interests of the community, which finds itself hemmed in by the interests of the individual and the species. 663

Uexküll concludes that the only way that we can really understand this is by placing ourselves in a position where we can see ourselves as part of a larger community of nature: “These mutual restrictions give us proof that we have before us a coarse-meshed tissue, which can be comprehended only from a standpoint higher than those afforded us by individual, community or species.” Uexküll refers to this as an “all-embracing interweaving.” 664

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662 Uexküll, “The Theory of Meaning”, p.29
663 Uexküll, *Theoretical Biology*, p.258
664 Ibid., p.350
Buchanan refers to Uexküll’s view where “Nature becomes akin to a ‘web of life’ that extends in all directions uniting both living and nonliving things,” and he discusses Uexküll’s striking example of the spider’s web, which exists in a contrapuntal relationship to the fly. Uexküll says that the “web is truly a refined work of art that the spider has painted of the fly,” and Buchanan adds that this helps us to understand

…the meaning underlying the ‘biosemiotic web’: the painted web that stretches to capture a contrapuntal melody brings an adhesive connectivity to this small domain of life and is representative of the interrelatedness of life itself.

This beautiful articulation of the implications of the Umwelt theory points to the microcosm of the complexity of relationships in nature that is visible in the everyday object, the spider’s web. Seeing this with a discerning eye we are opening ourselves up to greater and greater awareness of our place in nature. Buchanan directly relates this to the Umwelt, where

…Uexküll suggests that we can and probably should consider the organism as resembling a community of subjects just as much as we think about a community or city like a large organism.

Buchanan further notes that this view of organism as community enables a much greater understanding of the relationships that make up the entirety of the semiosphere, as he writes that

…bodies can enter into greater and more powerful bodies, as well as weaker and destructive ones, through the composition of relations between different things. For example, a

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665 Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.20
666 Uexküll, "The Theory of Meaning", p.42
667 Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.47
668 Ibid., p.42
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plant may have a certain relation with rain, but it will also have multiple relations, such as with the acidity of soil, the solar rays of the sun, other plants, birds, and so on.  

Buchanan goes on to explain that the plant, through these relations, becomes an individual at a greater level of complexity:

Through the composition of these relations, the plant may form a ‘higher’ individual, such as a symbiotic unit, a garden, forest, ecosystem, and so on which is itself its own body with its own speed and slowness, ability to affect and be affected. Similar examples may be found in an infinite number of ways, from human communities to coral reefs to labor forces to linguistic practices.

Similarly, Deleuze writes on Spinoza’s view of “a body,” applicable to any organism. He asks:

How does Spinoza define a body? A body, of whatever kind, is defined by Spinoza in two simultaneous ways. In the first place, a body, however small it may be, is composed of an infinite number of particles; it is the relations of motion and rest, of speeds and slownesses between particles, that define a body, the individuality of a body.

Deleuze uses Uexküll’s musical metaphor as he eschews any kind of reductionist or mechanistic view of life:

The important thing is to understand life, each living individuality, not as a form, or a development of form, but as a complex relation between differential velocities, between deceleration and acceleration of particles. […] In the same way, a musical form will depend on a complex relation between speeds and slownesses of sound particles. It is not just a matter of music but of how to live: it is by speed and slowness that one slips in among things, that one connects with something else. One never commences; one never has a tabula rasa; one slips in, enters in the middle; one takes up or lays down rhythms.

So organisms are organised in many, complex configurations, including societies, and it is at this level also that change needs to take place.

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669 Ibid., p.160
670 Ibid., p.173
672 Ibid., p.123
Communities and Societies: Felt Relationships

Is it possible, through these insights, to recast our understanding of what is meant by “society,” “community” or even “ecology,” to help address what Gunter describes, that “by carving up nature without regard to its own articulation...humankind has both diminished and destabilized the system of natural relationships”?\(^673\)

Gunter points to Whitehead as providing some clues to an answer, with his view of what is meant by “societies”:

They are not, on his terms, bare particulars which can be grouped under one class. Rather, members of a society are derived from one another (share in ‘genetic derivation’) and enforce on other society members the conditions which lead to their similarities. This applies to human societies, nonhuman animal and plant societies and nonliving societies like molecules and atoms. The members inherit from each other and contribute to each other.\(^674\)

Certainly, an awareness of this changes our own view of participation in our relationships with the rest of nature. As Whitehead explains, these “societies” exist at all levels of complexity in the universe, a truly synechistic view of community as existing from the molecular to the political, and with all forms reflecting the others:

The Universe achieves its values by reason of its coordination into societies of societies, and into societies of societies of societies. Thus an army is a society of regiments and regiments are societies of men, and men are societies of cells, and of blood, and of bones, together with the dominant society of personal human experience, and cells are societies of smaller physical entities such as protons, and so on, and so on. Also all of these societies presuppose the circumambient space of social physical activity.\(^675\)

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\(^{673}\) Gunter, "Whitehead's Contribution to Ecological Thought: Some Unrealized Possibilities", p.2

\(^{674}\) Ibid., pp.7, with reference to AI 260-261

\(^{675}\) Whitehead, Adventures of Ideas, p.206
Gunter provides a further insight into the idea of organisms as societies, as he examines the forest as a community of societies of trees. This “community of societies” echoes the idea I have discussed previously of communities of communities:

Perhaps it will seem clearer if, instead of talking about armies and regiments, we talk in terms of a plant growth community like a forest. A forest is a society in which each component influences each other part and is influenced by each other part. Its components are trees. Each tree is a society. Unlike a human being, a tree has no dominant society.

It is, according to Whitehead, a ‘democracy’. But like the forest, the subordinate societies of a tree (leaves, bark, cambium, roots, rootlets) all inherit from and constrain each other. The history of a tree is an unending mutual adaptation and readaptation of active centers. So is the history of an ecosystem, or a tissue, or the behavior of cellular slime molds.\(^676\)

Whitehead notes that, “a society, as a complete existence and as retaining the same metaphysical status, enjoys a history expressing its changing reactions to changing circumstances.”\(^677\) Gunther adds, “This would apply to all societies: animal, vegetable or mineral, democratic or monarchical.”\(^678\) But again, I argue that a rational understanding of this is not enough.

It is interesting that, despite the obvious importance to humans of social connections, the distorted rationality that is so pervasive makes it difficult for us to examine their significance and work towards their rehabilitation, particularly in the complex area of our relationship with the rest of the natural world. R. I. M. Dunbar and Susanne Shultz suggest that this is at least partly because language is poorly suited to describing — and therefore being able to share — emotional states and affective experiences. And as I have argued, these are the most important, fundamental aspects of our relationship with the rest of

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\(^676\) Gunter, “Whitehead’s Contribution to Ecological Thought: Some Unrealized Possibilities”, p.8
\(^677\) Whitehead, *Adventures of Ideas*, p.204
\(^678\) Gunter, “Whitehead’s Contribution to Ecological Thought: Some Unrealized Possibilities”, p.10
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nature, but the priority we give them is shaped by the dualistic/mechanistic framework that shapes our understanding. As they explain

It has become apparent that we lack adequate language with which to describe relationships... Intuitively, we know what we mean by bondedness because we experience it ourselves, and we recognize it when it happens. The problem, perhaps, is that bondedness is an explicitly emotional experience and language is a notoriously poor medium for describing our inner, emotional experiences.

Because relationships do not have a natural objective cognitive dimension that we can easily express in language, comparing the bondedness of different species is difficult (this may also explain why ethologists have invariably ducked the problem completely, preferring observable descriptions of behavior to grappling with what is going on inside the animal). [...] Part of the problem here is that social relationships have been seen as mere epiphenomena [a by-product of a mechanistic brain activity].

Do the concepts of the Umwelt and the semiotic extensions to it that we have considered, provide us with a better way of understanding and communicating the importance of these relationships? Let us return to Peirce to examine this question.

Peirce’s Firstness, equivalent to feeling and aesthetics forms a foundation for being. If we begin with this and look at its implications for transformation, we can see how the process might be initiated. Arne Naess notes that this process has already begun with some, as he notes that,

We feel our world in crisis. We walk around and sense an emptiness in our way of living and the course which we follow. Immediate, spontaneous experience tells us this: intuition. And not only intuition, but information, speaking of the dangers, comes to us daily in staggering quantities [italics added].

And as Emilio Moran suggests,

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...[if] we are to begin to move toward a sustainable Earth system, we must begin by building an awareness of what we do — no matter where it might be — and to reflect on whether that is an impact that we want to have.  

Also on the topic of getting people to take action on climate change, Bill Chameides, Dean of the Nicholas School of the Environment, Duke University urges:

Clearly just dispatching scientists and other talking heads is not the answer. All we are doing is appealing to people’s rational side when they are being controlled by emotional forces. To change their minds, we have got to appeal to the irrational in people. To change minds we first have to change hearts. We need to craft messages that get inside people’s psyche, viscerally connect with them and get them to want to act on climate change.

And as I argue shortly, one of the best ways to do this is through narratives that impact how we feel about the situation. George Loewenstein says the following about “affect,” that is mood or feeling:

Affect has the capacity to transform us, as human beings, profoundly; in different affective states, it is almost as if we are different people. Affect influences virtually every aspect of human functioning: perception, attention, inference, learning, memory, goal choice, physiology, reflexes, self-concept, and so on. Indeed, it has been argued that the very function of affect is to orchestrate a comprehensive response to critical situations.

This is a feeling of which we may not even be aware. Lowenstein continues: “My use of the term affect is somewhat different from the common definition that emphasizes subjective feelings. Affect, as I use the term, can occur below the threshold of conscious awareness.” This is the importance of a focus on feeling and the cultivation of greater

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684 Ibid., p.549
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awareness of feeling, affect, emotional forces, and their impact on rationality may be a first step to be able to change behaviour. But how can this lead to societal change at the level of civilisation? I argue that narratives will play a key role in this transformation.
Chapter 15: The Transformative Power of Stories

Here I expand on the role of narrative in enabling us to move from a “system society” to a “social society” by means of changing ethical values through stories. As viewed through Peirce, our values are shaped by our feelings and the formation of habits. I discuss this in the context of the imagination and the role of narrative in shaping our feelings and therefore our values. As semiotic distortion is embedded in the model of the world that most of us carry, I argue that this transformation can be accomplished through the development of a polyphonic narrative that gives a voice to all of nature, and this narrative needs to point to the future.

Activating an Ethical Imagination

As Firstness is equivalent to feeling, possibility and aesthetics, I have already introduced this as fundamental to the transformation of society to an ecological civilisation, and I now discuss how new metaphors and narratives could activate the deep feeling needed to be able to accept the need for transformation and find the ways to accomplish it. As I have discussed previously, Peirce’s view is that our understanding of the world is formed through both rationality and imagination, and as we are viewing ethics as founded in aesthetics, and considering its importance in enabling us to manifest empathy with the “other” in the natural world, it is appropriate to consider the role of narratives, or stories as an art form, in the development of the ethical imagination. As Alisdair MacIntyre writes, “I can only answer the question ‘What am I to do?’ if I can answer the

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685 Rosenthal, “Schemata and Semiotic Structure”
prior question ‘Of what story or stories do I find myself a part?’ So let us now consider
the role of narrative as an aesthetic practice in the establishment of an ethic for an eco-
logical civilisation.

Ideas about values are most often communicated through stories, whether they be
fables, parables, fairy tales, myths or legends. The current neoliberal ideology employs a
narrative of nature as a realm where survival is assured through individuals competing
against others, as “survival of the fittest.” And Mathews explicitly relates Fox’s conception
of value as responsive cohesion to narrative, and narrative as it relates to the biosphere,
when she refers to responsive cohesion as a “pre-established harmony of desires.”
Mathews suggests that the biosphere draws events that seem to be random into coherent
patterns, which have meaning in the way that stories do, and which are prototypically
moral. In this way the biosphere acts as a template for narrative, and Mathews gives ex-
amples of such desires, as follows:

> Final extinction is perpetually postponed by way of an almost infinitely complex attune-
> ment of all beings to the needs of others. All beings desire what other beings need them
to desire. Honey bees desire nectar, and in the process of getting it pollinate the flowers
who supply it. Bettongs desire truffles, and in the process of digging for them aerate for-
est soils. Emus desire zamia nuts, and in the process of digesting them prepare them for
germination.

This though, is not a story of false sentimentalism and Disneyesque harmony of coexist-
ence. Mathews continues:

> Although individuals do, in their striving for self-actualization, also inflict death and suf-
f ering on one another, via predation and parasitism for instance, at the end of the day
everyone in this proto-story serves others in the process of serving themselves: in the
larger fabric of life predation and parasitism optimize conditions for all species…

687 Freya Mathews, "The Eco-Genesis of Ethics and Religion", *Journal for the Study of Religion, Na-
ture and Culture*, 5, no. 3 (2011): 263-283, p.274
Meaning is at its root not only storied…but [also] proto-moral: do- unto-others is hatched within the story of the earth. This pre-established harmony of desires…is only proto-ethical because in the biosphere it has resulted from natural selection rather than conscious choice. Nevertheless, it does provide a clear template for ethics (italics added). 688

Ricoeur seems to make a similar point when he argues that the world has a “pre-narrative structure” which supports the definition of narratives from elemental events. 689

And Whitehead refers to animal life as displaying

[F]lashes of aesthetic insight, of technological attainment, of sociological organization, of affectionate feeling. [A]ll these modes of functioning are carried to an immeasurably higher level among mankind. [However, in] human beings these various modes of functioning exhibit more variety of adaptation to special circumstances, they are more complex, and they are more interwoven with each other. But without question, among animals they are there, plainly demonstrated to our observation. 690

I argue here that, in line with the development of effective — and in this case we are considering their aesthetic value — narratives, it is helpful to consider metaphorical views of ethics, as metaphors are of fundamental importance in understanding various ethical approaches and seeing how they are likely to be applied in real life. Ethics is often seen as a form of accounting: Weighing the balance of right and wrong; applying a prescribed set of rules to a moral dilemma in order to calculate an answer; paying a debt. As Steven Fesmire notes:

Despite sharp differences, the dominant contemporary moral philosophies in the United States and Britain share a quest for an irrecusable principle or system of rules regulating human conduct. 691

This, of course, is in line with the central argument of this dissertation, as Coffman and Mikulecky put it:

688 Ibid., p.274
690 Whitehead, Adventures of Ideas, p.140
691 Fesmire, John Dewey and Moral Imagination: Pragmatism in Ethics, p.2
Cartesian dualism and Newtonian determinism have been internalized as an unconscious mental frame that mistakenly yet habitually con_ates the ideal of objectivity with mechanistic causation.

This “unconscious mental frame” (effectively a schema, formed by semiotic displacement) makes all causation seem mechanical and, quite understandably, leads us to see all life — except perhaps our own, which we experience as agentic — as alien, “other” and Coffman and Mikulecky agree that one of the casualties of this is “empathy, the very foundation of morality” (italics added).692

In contrast to empathy, McDonald notes the Cartesian dualism which I have discussed earlier, “effectively gave a metaphysical basis for egoism, as the solitary subject was identified as an ego, and its worldview is necessarily egoistic.” This, of course, means a justification of an anthropocentric ethics as “rational,”693 and its impact on our relationship with the natural world is seen as a reasoned and reasonable outcome. However, this is not the way we have always considered our relationship with nature.

Steiner makes a comparison with pre-modern societies, and we could also apply this to societies such as the Runa, considered earlier, who have a vastly different relationship with the rest of the natural world. He states, concerning the moral foundation of such societies: “[The] moral orders of archaic societies lead to respectful relationships with not only entities of the environment such as plants or animals but also whole parts of landscapes, such as rivers, woods or mountains.” This is a holistic view of ethics, in contrast to our own civilisation, where ethical value are fragmented by self-interest:

692 Coffman and Mikulecky, Global Insanity: How Homo Sapiens Lost Touch with Reality While Transforming the World, p.117
693 McDonald, John Dewey and Environmental Philosophy, p.259
At the other end, in our present economic society, the process of enlightenment has ended up in a degree of individualism never attained before, an individualism whose assets consist in the gain of political freedom and civil rights, but whose drawbacks are the eventual total loss of integrating moral orders of a collectively binding quality. Archaic principles become subdued and morality becomes a matter of personal relativism, that is, empirically observed preferences establish largely materialistic values ex post facto.694

But just as the felt understanding of a metaphor can alter a relationship, so too can a relationship transform our character, as Gunter observes that:

An internal relationship is one in which the relationship transforms one or more terms which stand in the relationship. Presumably a profound love between two people transforms, significantly, the character of both. Presumably, a long-sustained relationship between two species (as in cases of mutualism) to some extent transforms the character of each species.695

Gunter uses a positive example of a symbiotic or mutually beneficial relationship, and contrasts this with a relationship of exploitation, where one party deliberately excludes the other from ethical consideration, as in humanity’s relationship with the rest of nature, this may have changed the very nature of our humanity. He adds,

…societies, whether of a plant or of a plant growth community, for example, are what they are as a whole, because of the close and determining relation of each thing to each thing in the community. It is the holistic complex of interrelations which Whitehead insists upon, and which is what Aldo Leopold terms integrity.696

As mentioned previously, the foundation of an ecological ethics is a wholeness, or integrity, and as Westra and Bosselmann, note:

Ecological integrity is valuable and valued [and] natural ecosystems are valuable to and in themselves, for their continuing support of the life on Earth, for their aesthetic features, and for the goods and services they provide to humankind. Ecological integrity is thus essential to the maintenance of ecological sustainability as a foundation of a sustainable

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694 Steiner, "Human Ecology As Transdisciplinary Science, and Science As Part of Human Ecology", p.483
695 Gunter, "Whitehead’s Contribution to Ecological Thought: Some Unrealized Possibilities", p.11
696 Ibid., p.11
society. For these reasons, there is a growing body of policy and law which mandate the protection and restoration of ecological integrity.\textsuperscript{697}

This relates to what Konrad Ott refers to as “the IMV problem” or the decision about which class of beings to which we should attribute Inherent Moral Value, these beings forming part of our Moral Community (MC). Ott nicely describes the extent of this moral community as follows:

The IMV problem should not be confused with the question of which parts of nature human societies mostly rely on. There is strong empirical evidence that human systems rely deeply on beings (such as convective belts, clouds, plants, micro-organisms and plankton) that are different from the natural beings that are prima facie candidates for MC membership (for example whales, dolphins, apes and elephants). Recognizing the embedding and reliance of human systems is different from attributing IMV. The concept of living in integrity has to address both questions without confusion.\textsuperscript{698}

Tim Jackson quotes the modern-day Islamic scholar Zia Sardar as stating that “prosperity can only be conceived as a condition that includes obligations and responsibilities to others,” and this would have to include the “others” in the biosphere, whereas today’s society is, according to Jackson “a system driven by anxiety.”\textsuperscript{699} And Mathews notes that within our current democratic system “there are no grounds intrinsic to…protecting the non-human world for its own sake.”\textsuperscript{700} However, in line with what I am arguing, she suggests

…that a form of human identity defined not in terms of its independence from others but rather in terms of its relationships with them would provide a more appropriate onto-

\textsuperscript{697} Bosselmann, Westra and Westra, \textit{Reconciling Human Existence with Ecological Integrity: Science, Ethics, Economics and Law}, pp.7\textsuperscript{\textendash}, n7\textsuperscript{\textendash}
\textsuperscript{699} Jackson, \textit{Prosperity Without Growth: Economics for a Finite Planet}, pp.36, 101
\textsuperscript{700} Mathews, “Community and the Ecological Self”, p.4
logical foundation for an ecocentric polity than liberal individualism does. It is the ‘relational self’, rather than the ‘separate self’ of liberalism, that regards the interests of others as inextricable from its own, and is accordingly imbued with fellow-feeling.

[This empathetic perspective] is not the rather cold-blooded business of working out that to which others are rationally entitled, whether one likes it or not, and whether one knows them or not, but is rather a matter of responding appropriately to those we do know — those with whom we are in communication, in relationship. In other words, morality from this perspective does not rely on tablets of commandments, or rules of conduct, but trusts our own responsiveness to those we know and about whom we accordingly care. Its primary goal is the preservation of the web of relationships which define or sustain both the self and others.701

Mathews terms this “eco-communitariansim,”702 and it demonstrates how a relationship-based ethics and transform our idea of our self, and pave the way for transformation of society and civilisation.

But is there a possibility of changing ethics through the introduction of a new metaphor that will help us to incorporate the Firstness of feeling into ethical decisions and, more importantly, help to change the ethical foundation of rationality to incorporate this quality?

A New Ethical Metaphor

I have earlier discussed the dominant metaphor of ethics as accounting, but rather than one based on a prescribed set of rules that is designed to calculate an ethical outcome, Havelock Ellis suggests a different metaphor for ethics, one that allows a place for empathy, that of ethics as art. As he suggests,

The academic philosophers of ethics, had they possessed virility enough to enter the field of real life, would have realized…that the slavery to rigid formulas which they preached

701 Ibid., p.4
702 Ibid., p.1ff
was the death of all high moral responsibility… A clear-sighted eye, a many-sided sympa-
thy, a fine daring, an endless patience, are for ever necessary to all good living. With such
qualities alone may the artist in life reach success; without them even the most devoted
slave to formulas can only meet disaster.\textsuperscript{703}

With respect to our view of nature, a turning away from “rigid formulas” and an embrac-
ing of “real life” along with “a many-sided sympathy,” “patience,” and a “clear-sighted
eye” would likely lead to a different view of nature than our current dominant ethics sug-
gests. Goodwin argues that this leads to a valuation of organisms that is completely dif-
f erent to one based on a view of them as resources:

Organisms cease to be mere survival machines and assume intrinsic value, having worth
in and of themselves, \textit{like works of art}. Such a realization arises from an altered understand-
ing of the nature of organisms as centers of autonomous action and creativity, connected
with a causal agency that cannot be described as mechanical (italics added).\textsuperscript{704}

There are other similarities between ethics and art that can be considered in our examina-
tion of this new moral metaphor. The concept of ethics as art, which supports Peirce’s
assertion of ethics as founded on aesthetics, is further developed by Fesmire, as he exam-
ines the similarities between moral conduct and art in relation to Dewey’s work on the
“moral imagination.”\textsuperscript{705}

Fesmire notes that both moral and artistic endeavours follow a narrative structure,
with art, like morality, as a type of social communication, and requiring skills such as “per-
ceptiveness, creativity and expressiveness.”\textsuperscript{706} He also refers to Dewey’s distinction be-
tween the “artistic” and the “aesthetic” as acts of production and perception respectively,

\textsuperscript{703} Ellis, \textit{The Dance of Life}, p.1
\textsuperscript{704} Goodwin, \textit{How the Leopard Changed Its Spots: The Evolution of Complexity}, p.xvi
\textsuperscript{705} Fesmire, \textit{John Dewey and Moral Imagination: Pragmatism in Ethics}
\textsuperscript{706} Ibid., p.113
and he notes the importance of continual engagement with moral enquiry and its appre-
ciation, as

…the stilted perception of anesthetic experience is a sure route to miserable behavior be-
cause as imagination shrinks, foresight and critical appraisal are abandoned to the inertia
of mechanical habit.\(^\text{707}\)

Thus, the lack of aesthetic experience in the context of moral enquiry leads to “the intertia
of mechanical habit”—which strongly echoes the ideas of semiotic displacement leading
to schema that provide a distorted view of the natural world.

Browne also refers to Fesmire’s argument that, “The moral of the arts is that every-
day moral decisions can be as richly consummated as artistic productions.”\(^\text{708}\) In addition,
Epstein asks, “Can we imagine a universal ethics constructed in the subjunctive, not the
imperative, mood— an ethics of possibility, not of duty?” and he refers to Berdyaev’s
comment on the “moral crisis” of the 20\(^{\text{th}}\) (and 21\(^{\text{st}}\)) century as

…the transition from a consciousness for which morality is obedience to general laws, to
a consciousness for which morality is the individual’s creative task [and] if morality does
not call humanity to duties, it can still call on us to create possibilities...Ethics may now
consist of our creating possibilities for one another.\(^\text{709}\)

Linking “possibility” with ethics echoes Peirce’s explanations of Firstness—which carries
unconstrained potential—with the constraints of Secondness as ethics. He suggests that
what he refers to as “the subjunctive mood” in ethics may open up “new experience,
tolerance and intellectual curiosity.”710 This allows for the formation of new habits, and therefore a new way of seeing the world. As Potter explains:

Peirce’s final position…was that ethics or practics is a special case or species of esthetics, because somehow or other esthetics deals with the deliberate formation of habits of feeling which ultimately govern deliberate conduct (doing or thinking).711

Thus, the “taking of habits” moves existence from the creativity and potentiality of aesthetics, through the tendencies and preferences of ethics, to the greater rigidity of rationality. As I have discussed, a civilisation of any kind is developed and sustained through a combination of habits and signs, but the resultant culture, economics, politics and other systems of power relations form a protective wall of rationality around the ideology. Therefore, in order to produce change we need to consider how the rationality of an ecological civilisation could be based on this view of ethics, which incorporates the aesthetic.

But are there particular ethical implication for us, as humans, with regard to our own membership in this “biotic community” of the land?

Mikhail Epstein discusses our ethical relationship with the rest of nature and suggests that the ethic of Western civilisation is based on two supreme ethical relationships, to the parent/creator and to the neighbour “that coexists and that has an equal value.” He refers to two of the Ten Commandments which, according to the Gospel of Matthew, Christ highlighted as the two greatest in response to the question “Teacher, which is the greatest commandment in the Law?” The reply is recorded as:

“Love the Lord your God [the Creator] with all your heart and with all your soul and with all your mind.” This is the first and greatest commandment. And the second is like it:
“Love your neighbor as yourself.” All the Law and the Prophets hang on these two commandments.712

710 Ibid., pp.54-55
711 Potter, Charles S. Peirce on Norms & Ideals, p.54
712 Matthew 22:36-40, New International Version
Epstein suggests that it is possible to cast nature “in a double ethical relationship with humans…as both their mother (progenitor [or Creator]) and neighbour (environment).” He suggests the term “ecognition” which

…involves the ethical recognition and theoretical reconstruction of pre-cultural beginnings in the very unfolding of culture, …the recognition of the ecological premises of all human activities, an attempt to restore and honor the conditions of their possibility. 713

But who and what is included in this “ecognition”?  

Understanding our moral obligations to the natural world, particularly when it seems to conflict with what the dominant ideology tells us are the rights of humans, is fraught with difficulty. The rest of nature is not normally included in what Helen Fein refers to as “the universe of obligation.” This term, used by Fein in her study of the Holocaust to describe “that circle of people with reciprocal obligations to protect each other whose bonds arose from their relation to a deity or sacred source of authority,” 714 could easily be applied to humanity’s relationship to the rest of the natural world. When Fein summarises the conditions that lead to an act of genocide she notes that primarily, “[the] victims have…been defined [as] outside the universe of obligation of the dominant group.” 715

And if a group is seen as external to this “universe of obligation,” then there is no reason to apply the usual moral standards to the way that they are treated.

As Zygmunt Bauman notes, the scope of its impact may be as follows:

The “universe of obligation” designates the outer limits of the social territory inside which moral questions may be asked at all with any sense. On the other side of the boundary, moral precepts do not bind, and moral evaluations are meaningless. To render  

713 Epstein, The Transformative Humanities: A Manifesto, p.86
714 Helen Fein, Accounting for the Holocaust: National Response and Jewish Victimization During the Holocaust (New York, NY: Free Press, 1979), p.4
715 Ibid., p.9
the humanity of victims invisible, one needs merely to evict them from the universe of obligation.\footnote{Zygmunt Bauman, Modernity and the Holocaust (Ithaca, NY: Cornell University Press, 2014), p.27}

This invisibility leads to what Bauman has termed “moral blindness,”\footnote{Zygmunt Bauman and Leonidas Donskis, Moral Blindness: The Loss of Sensitivity in Liquid Modernity (Malden, MA: Polity Press, 2013).} where the moral character of action is either invisible or purposefully concealed and he illustrates it by suggesting that…

\[\text{it is helpful to think of the workers of an armament plant who rejoice in the “stay of execution” of their factory thanks to big new orders, while at the same time honestly bewailing the massacres visited upon each other by Ethiopians and Eritreans; or to think how it is possible that the “fall in commodity prices” may be universally welcomed as good news while “starvation of African children” is equally universally, and sincerely, lamented.}\footnote{Bauman, Modernity and the Holocaust, p.24}

How can this complete conflict of ethical ideas be sustained in an individual? Fein, in a discussion of how “modern premeditated genocide” can be seen as rational, suggests that “we must consider how it may be motivated or appear as a rational choice to the perpetrator.”\footnote{Fein, Accounting for the Holocaust: National Response and Jewish Victimization During the Holocaust, p.7}

We might also consider how this reasoning might apply to ecocide, based on the definition that

\[\text{…ecocide is the extensive damage to, destruction of or loss of ecosystem(s) of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been or will be severely diminished.}\footnote{Eradicating Ecocide, “What Is Ecocide?”, Eradicating Ecocide, http://eradicatingecocide.com/overview/what-is-ecocide/ (accessed August 25, 2014).}

As ecosystem damage is occurring on a global scale, it can be said to be threatening, not only “peaceful enjoyment” but also the life of all humans, as well as many other inhabitants of the biosphere. Fein continues with regard to genocide, but in this passage in particular, the words “genocide” and “ecocide” are almost interchangeable:
Because the notion of a self-destroying society contradicts the classic rational notions of the ends for which society is constructed. It is hard to conceive of genocide as ‘rational’. [...] To understand genocide as a class of calculated crimes, such crimes must be appreciated as goal-oriented acts from the point of view of their perpetrators: genocide is rationally instrumental to their ends, although psychopathic in terms of any universalistic ethic...

Modern premeditated genocide is a rational function of the choice by a ruling elite of a myth...legitimating the existence of the state as a vehicle for the destiny of the dominant group, a group whose members share an underlying likeness from which the victim is excluded. Such a formula requires a myth exalting the origins of the group and idealizing the idea of the people so that the ‘real’ capacities of the group cannot be judged by its members.\[721\]

This “myth” mentioned by Fein may include the command from the primary Judeo-Christian text to “conquer the earth” (Genesis 1:28) as well as the Cartesian conception of the universe which puts humans into a different class of being from the rest of the natural world. As Fein mentions, in the case of the Holocaust,

…the political formulas justifying the extinction of the targeted group were the tools of new leadership, [and] the victims had earlier been decreed as outside the universe of obligation... [A] doctrine that assumes people do not belong to a common species knows no limits inhibiting the magnitude of permissible crime.\[722\]

J. V. Montville, in a discussion about human conflict, refers to the psychoanalyst Erik Erikson’s term “pseudospecies” to describes the way in which some groups or societies define opposing groups as not fully human, and therefore emphasise their “otherness,” thereby paving the way for open hostility and, if effect, an exclusion from the universe of moral obligation.\[723\] The extent of the problem that needs to be addressed is seen by Erikson’s further description:

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\[721\] Fein, Accounting for the Holocaust: National Response and Jewish Victimization During the Holocaust, p.7  
\[722\] Ibid., p.30  
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[While man is obviously one species, he appears and continues on the scene split up into groups (from tribes to nations, from castes to classes, from religions to ideologies) which provide their members with a firm sense of distinct and superior identity — and immortality. This demands, however, that each group must invent for itself a place and a moment in the very centre of the universe where and when an especially provident deity caused it to be created superior to all others, the mere mortals.]

Hoffmeyer suggests that “all living systems deserve to be considered as moral subjects, but some of them more so than others.” Those, “more so,” according to Hoffmeyer, are those with a complex nervous system, whereas those more primitive, such as amoebas or mealworms, enter the realm of moral subjectivity at the level of their species. Tønnessen also argues that we should consider at least higher-level bio-ontological entities as moral subjects, and this is an area where more research would be valuable.

He echoes the idea of responsive cohesion in this determination as he suggests that the reason for this is that a “living being is not an isolated incident. In a profound sense, a subject is what it relates to. The contrapuntal relations that it takes part in, largely, define what being this subject is all about.” Further relating this to the connections inherent in the biosphere, he notes that the

...individual self branch off into the society of phenomenal subjects and into the phenomenal world, it is already...more-than-individual. You cannot really value a subject without at the same time valuing the web of contrapuntal relations that it takes part in.

This inclusive conception of morality fits well with a view of the biosphere as semi-sphere. Wheeler refers to Bateson’s definition of that which is meaningful, as “a sign is a difference which makes a difference” and she notes that “meaning (significance) springs

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from semiosis, and both words have the same roots in the Greek word for significance.\textsuperscript{727} Thus, as I have argued, a consideration of semiosis as central to our vision of an ecological civilisation helps to see all parts of the natural world as having meaning and value: significance.

But how can we demonstrate the power of narrative to bring about transformation, and how does this enable us to map out a way forward? I argue that this requires us to understand how narratives represent a type of model of the world.

Models for Change

At the foundation of the problems I identified as requiring urgent attention to enable the survival of humanity are faulty, shared assumptions and representations of the world, instantiated as schema and maintained, despite their destructive outcomes, by fields and habitus, and the relations between them. These assumptions and schemata are models of the world that we carry. I have briefly considered how changes to these representations are possible, and how this can bring about change at an individual and societal level, so let us examine these “models” in more detail, and later I will discuss a particular type of model, that of narrative.

Although we are natural beings, we have evolved the ability to create cultures which through evolution have displaced us from the original living feeling, the pure potentiality of Firstness, and we have been, so to speak, denaturalised. Cultural Thirdness is able to effect our biological evolution, as although no new genetic change is produced by culture, it will favour or impede genetic predispositions. As Thellefsen suggests, the gap between

\textsuperscript{727} Wheeler, \textit{The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture}, p.63
the biological evolution and the symbolic evolution which may be seen as the sign displacement, as I have discussed earlier, and the impact on biological evolution can be seen as semiotic constructivism, whereby we create our understanding of the world from within the standpoint of our culture, in Peircian terms: Thirdness.\textsuperscript{728}

I have discussed Oelschlager’s suggestion that the current narratives of economics and the natural sciences are semiotically “irrational,”\textsuperscript{729} but they are enshrined the dominant global ideology of neoliberalism, which both shapes and reflects the internal model of the world that we hold. Therefore, in order to pave the way for an ecological civilisation these models must be subverted and a new model created, expressed in a new narrative that restores rationality to its proper place, firmly founded in the normative sciences of aesthetics and ethics. Change needs to begin at an individual level and therefore the concept of “sign displacement” is important to be considered here. As Thellefsen argues, our understanding of nature, although gained by semiosis, is artificial, as the signs we interpret have already undergone several interpretations through our culture, and thus, says Thellefsen “we have removed ourselves from our natural starting point and have lost touch with nature due to [our] strong cultural evolution.”

A focus on the models that humans — and others in the semiosphere — use to construct, sustain, understand and operate within their society and community may help to bridge this gap and open opportunities for change. I argue that internal representations of the world shape understanding and influence behaviour, and that these representations can be viewed as internally constructed models that both reflect and refract nature\textsuperscript{730} and

\textsuperscript{728} Torkild Thellefsen, “CS Peirce’s Evolutionary Sign: An Analysis of Depth and Complexity Within Peircean Sign Types and Peircean Evolution Theory”, \textit{SEED (Semiotics, Evolution, Energy, and Development)} (2001), pp.3, 4

\textsuperscript{729} Oelschlager, “Ecosemiotics and the Sustainability Transition”, p.220

\textsuperscript{730} Vološinov, \textit{Marxism and the Philosophy of Language}, p.9
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enable the individual — and the community — to determine their place in nature, which includes their relationships with other inhabitants of the natural world. In analysing the various types of systems that exist, in human and non-human realms, Stanley Salthe notes that some

...systems that are both complex and organized are capable of constructing new components and subsystems out of preexisting internal ones... Such systems are logically incomplete and continually self-creating ('self-modifying').

And Salthe goes on to describe them in terms of the maintenance of models:

Their basic style of behavior is recursive, but they construct rather than compute, and so their inherent dispositions and categories may change. Although they are autonomous, they must continually search out new relations with their surroundings, and this, I believe, implies that they require internal representations.

Salthe relates this type of system to the Umwelt concept of Uexküll, which describes the phenomenal worlds of cognising organisms, as I discussed earlier. With respect to models that may be used by humans as part of their understanding of the world and their place in it, Paul Cobley agrees that the human Umwelt, as conceived by Thomas Sebeok, drawing upon Uexküll, incorporates models within the human organism. Models are semiotic and therefore semiotic systems may also be considered as modelling systems.

Part of the key to transformation to an ecological civilisation is the reconsideration and reconfiguration of models that we hold of the world, as I shall discuss, and Salthe notes that such semiotic systems, and therefore, presumably, the models that represent

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732 Ibid., p.363
733 Cobley, "Cybersemiotics and Human Modelling", p.2053
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them, “are creative, and live in a problematic world where their own activities create further disorder that they must deal with.” But the first thing to accomplish is to bring these models, and the ideas on which they are based, into awareness.

As Emilio Moran suggests, one of the components of the move towards a more ecological civilisation is to build “awareness of what we do — no matter where it might be — and to reflect on whether that is an impact that we want to have.” As Anthony Barnosky et al. note,

…because the global-scale ecosystem comprises many smaller-scale, spatially bounded complex systems (for instance the community within a given physiographic region), each of which overlaps and interacts with others, state shifts of the small-scale components can propagate to cause a state shift of the entire system.

But how can this “state shift” be accomplished?

Narratives as Iconic Signs

As I have discussed, ideology supports and sustains the type of civilisation within which we live, including the way that knowledge is acquired and science is practiced, and narrative has a strong role in the development, expression and maintenance of an ideology, so let us now examine the role of narrative in shaping our understanding of the world through science and the place that it might play in the development of an ecological civilisation. In addition, human cultural institutions, including those of education, economics, politics, law, media, religion, and others, all incorporate anticipatory models, expressed in

the form of narrative, but also reified in societal structures, and cultural and social processes which both reflect and shape underlying societal norms, customs and attitudes.

I argue here that a narrative is a form of model as, just like any model, it makes use of semiotic constructs, provides representations of real states, objects, systems and processes, and supports their abstraction, manipulation, as well as a primary function of narrative: to enable communication. If we consider narratives, just like other models, in terms of Peircian Semiosis and Categories we may be able to discover how narrative as a model can be shaped, and consider how this knowledge may be integrated into an ecological science that recognises narratives as anticipatory systems — a concept I will discuss in more detail later — and anticipatory systems as models.

In Peircian terms a narrative when considered as a sign is an icon. Icon refers to a sign that expresses “a mere relation of reason between the sign and the thing signified” (CP 1.372), which also well describes a model. Examples Peirce gives of icons are portraits, diagrams, metaphors and photographs (CP 2.92, 2.227, 2.441) and, although Peirce does not explicitly nominate this, a narrative would well fit with Peirce’s definition of an icon. As the icon expresses the relationship “between the sign and the thing signified” it enables the revelation of previously unseen or unnoticed qualities and also supports what Peirce refers to as “colligation,” that is the bringing together of ideas into a new understanding, a new iconic sign. Peirce describes the iconic sign thus:

>[A] great distinguishing property of the icon is that by the direct observation of it other truths concerning its object can be discovered than those which suffice to determine its construction. Thus, by means of two photographs a map can be drawn, etc. Given a conventional or other general sign of an object, to deduce any other truth than that which it explicitly signifies, it is necessary, in all cases, to replace that sign by an icon. This capacity of revealing unexpected truth is precisely that wherein the utility of algebraical formulae consists… (CP 2.279)
And with respect to the creative potential of the iconic sign, he asserts:

> The first step of inference usually consists in bringing together certain propositions which we believe to be true, but which, supposing the inference to be a new one, we have hitherto not considered together, or not as united in the same way. This step is called colligation. (CP 2.442)

Peirce describes how this process, which we may consider as a creative modelling process, is able to produce new iconic signs which, as I have discussed, could be narratives, and how these new icons enable the consideration of certain features that were present — but perhaps less well revealed — in the original icon:

> An inference, then, may have but a single premiss, or several premisses may be united by colligation. In the latter case, they form, when colligated, one conjunctive proposition. But even if there be but one premiss, the icon of that proposition is always more or less complex. The next step of inference to be considered consists in the contemplation of that complex icon, the fixation of the attention upon a certain feature of it, and the obliteration of the rest of it, so as to produce a new icon… (CP 2.443)

### Narratives as Transformative Models

As mentioned previously, a model is essentially the qualities of a natural system encoded or represented in some way — often, as with an ideology, as signs and symbols, which are linked and related as the qualities are in the original system, but with some loss of meaning through the abstraction process. Bateson’s description of the benefits to the use of models echo Peirce’s discussion of the operation of iconic signs.

First, Bateson suggests that it provides a language, far better suited than any conventional language to the examination of relations. As he explains, in language “[w]e start by naming the parts and after that the relations between the parts appear as predicates attached usually to a single part — not the two or more parts among which the relation

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737 Rosen, "Anticipatory Systems", p.261
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existed. What is required is precise talk about relations, and a model will sometimes facilitate this.”

Second, Bateson argues, once we built “a vocabulary of relations,” then the model itself “will generate questions,” and this means that we can examine the subject of the model with these questions in mind, and perhaps be able to find answers. Finally, he suggests that “a model becomes a tool for comparative study of different fields of phenomena. It is above all the tool of abduction, drawing from phenomena in different fields that which is shared among them.” But how is this expressed in the form of model which we call a narrative?

In human and societal terms, and this includes the acquisition of knowledge and the practice of scientific enquiry, narrative enables us to deal simultaneously with that which is established as fact and norm, even that which is considered sacred or canonical, as well as with that which is exceptional, strange, new, or even uncanny, whether or not it is hidden or exposed, and enables us to build new and shared meaning and negotiate change. Frank Oldfield suggests that narrative enables the transmission and exploration of ideas that can bypass any cultural constraints of deterministic or overly mechanistic patterns of thought — which patterns form the basis of our current dominant ideology. And a reconsideration of this may allow a place for the consideration of anticipatory systems in scientific enquiry.

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738 Bateson and Bateson, Angels Fear: Towards An Epistemology of the Sacred, p.37
A narrative as a form of model represents and describes a process as it develops over time. Changes to the narrative essentially enable the production of different states in the model. Narratives exist in the semiosphere and pervade and enable all forms of life. If our narratives have created and sustained a world view that leaves us disconnected from the rest of the natural world, then it is narrative may be able to play a role in reconnecting us. But, in line with our goal to reconnect with the rest of the natural world, and considering the importance of synechism in our Peircian conception of nature, if models, or narratives, exist in the human world, why would they not exist in the non-human world? I have discussed Mathews idea of proto-stories in ethics and David Abram notes that the Lebenswelt, Husserl’s intersubjective world of life, will be different for different cultures.

And if the Lebenswelten experienced by humans are diverse, how much more so the world experienced by the non-human inhabitants of the ecosphere. This is the concept of Uexküll’s Umwelt which is, in effect, part of the Lebenswelten of all organisms, and as Thure von Uexküll writes: “The Umwelt-theory draws the line not between nature and man, but between animate and inanimate nature.” This may enable us to consider how models have emerged in the biosphere and also to consider how new models may emerge — as described by Peirce, through the process of colligation — that represent a non-dualistic view of humans as part of nature and thus support the development of an ecological civilisation.

741 Mathews, “The Eco-Genesis of Ethics and Religion”, p.274
742 Abram, The Spell of the Sensuous: Perception and Language in a More-than-human World, p.40
743 Uexküll, "Introduction: The Sign Theory of Jacob Von Uexküll", p.284
We may even consider that models are the very basis of life. Kull cites Rosen (in his book *What is Life?*) as arguing that, “Life is the manifestation of a certain kind of (relational) model. A particular material system is living if it realizes this model,” and Kull continues,

> If we were to use the concept of model in a most broad sense, then we could also say: life is the process of modelling sensu lato [in the broad sense]. If Umwelt is a product of modelling, then the process of modelling an Umwelt turns out to be a modelling of modelling.\(^{744}\)

Kull then contrasts the study of life through semiotics with that performed through physics and chemistry, and suggest that any

> …object studied by semiotics, being by its very nature plural, can never have a complete description. This is in distinct contrast to physics, for which a model of a thing can be close-to-complete, at least in principle. Therefore it is conceivable that some parts of physics can reach final conclusions, or can build an exact model. This may never happen for semiotics — chemical reactions per se might be identical, but life is not. Semiotic modelling is thus revealed to be based on qualitative relations and qualitative methods. Quantitative description can reveal next to nothing about the modelling process. Thus, semiotics goes beyond science, but it also includes it.\(^{745}\)

As I have discussed previously, with regard to Peirce’s three Categories of Being, Firstness incorporates possibility, preceding Secondness, which acts on Firstness to create actuality from potentiality, crowding out the other possibilities. Natural laws are manifestations of Thirdness. If, as Peirce suggested, nature has a tendency to form habits based on its reaction (Secondness) to these natural laws (Thirdness), then these habits would tend to be abstracted from these laws. As Peirce states, in line with his assertion that “matter is effete mind,” “ideas tend to spread continuously… In this spreading they lose intensity…but gain generality and become welded with other ideas” (CP 6.25, 6.104).

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\(^{744}\) Kull, "Umwelt and Modeling", p.47

\(^{745}\) Ibid., pp.48, 49
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Peirce also noted that chance, being governed by the law of probability calculus, “can produce uniformities far more strict than those from which it works” (W 4.551). Is it possible that in these abstractions and tendencies to uniformities lies the genesis of life’s use of models, themselves abstractions containing generalities, to interact with the world?

As we consider the pervasiveness of narratives, let us ponder the many different ways that stories can be expressed, as I examine an example of what we might call a “pre-modern rationality,” as a form of narrative embedded in architecture. Alexander provides a fine example of this in the architecture associated with deeply traditional societies. He notes that the designs of dwellings are strongly associated with ancient narratives, and this gives them stability, consistence and functionality that serves the community well. He notes that the

…most visible feature of architectural tradition in such unselfconscious cultures is the wealth of myth and legend attached to building habits. While the stories rarely deal exclusively with dwellings, nevertheless descriptions of the house, its form, its origins, are woven into many of the global myths which lie at the very root of culture; and wherever this occurs, not only is the architectural tradition made unassailable, but its constant repetition is assured.746

Alexander points to specific instances of this, as follows:

The black tents, for example, common among nomads from Tunisia to Afghanistan, figure more than once in the Old Testament. In a similar way the folk tales of old Ireland and the Outer Hebrides are full of oblique references to the shape of houses. The age of these examples gives us an inkling of the age and strength of these architectural traditions which maintain the shape of unselfconscious dwelling forms. Wherever the house is mentioned in a myth or lore, it at once becomes part of the higher order, ineffable, immutable, not to be changed.747

746 Alexander, Notes on the Synthesis of Form, p.47
747 Ibid., p.47
It is interesting to note the strength of these traditions, as they are even associated with transition of the living to the spirit world upon death. As Alexander observes,

When certain Indians of the Amazon believe that after death the soul retires to a house at the source of a mysterious river, the mere association of the house with a story of this kind discourages all thoughtful criticism of the standard form, and sets its ‘rightness’ well beyond the bounds of question.\footnote{Ibid., p.47}

Thus, a traditional and functional form of rationality forms a firm foundation for at least one major aspect of civil life. But can we find a contemporary example of a transformative change, a change that supports the idea of the value of empathic relationships? Indeed we can.

**Change Through a Polyphonic Narrative**

As an example of the emergence of empathy through narrative, we can consider an example of an attempt to close what is known as the “the racial empathy gap.” A study at the University of Virginia which included white participants, black participants, and nurses and nursing students, found that there was a general assumption that blacks felt less pain than whites. The impact of this on behaviour is shown by studies over the last 20 years in the US which have found that minorities, primarily blacks and Hispanics, receive inadequate pain medication. Racial disparities in pain management have been recorded in the treatment of migraines and back pain, cancer care, and even children with orthopedic fractures. A 2008 review of 13 years of US data on emergency room visits found that for
a pain-related visit, an opiate prescription was more likely for white patients (31 percent) than black patients (23 percent). \(^749\)

However, in a 2011 study, researchers tested whether empathy induction through a process known as perspective-taking reduced pain treatment disparities. Participants assigned to the perspective-taking group were instructed to “try to imagine how your patient feels about his or her pain and how this pain is affecting his or her life.” The perspective-taking intervention reduced treatment bias by more than half. \(^750\) As this illustrates, the best way to induce empathy is through a narrative: “try to imagine…” But how can this small-scale example be translated to the wide-ranging narrative that is needed to bring about an ecological civilisation?

As Gare has proposed, after Bakhtin, there is no single “grand” narrative that can adequately provide a story to which we can all relate, and that enables us to make sense of our place in the world. A narrative that recognises the “ecology of selves” would be the ultimate polyphonic narrative, providing a multiplicity of perspectives and helping us to understand the world which we share with so many other human and non-human communities. \(^751\) As Mathews observes,

I am suggesting then that it is through the astonishing and as yet little-known biographies of our myriad fellow species (our neighbours) that we can begin to tell the story of the earth — to myth the biosphere. Telling these stories will, little by little, impress into our collective consciousness the great earth-truth that underlies all our lesser religious and

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751 Gare, Postmodernism and the Environmental Crisis, p.140
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cultural stories, the earth-truth that is ultimately a moral, or proto-moral, truth: we live by enabling others to live. This is a normative as well as a descriptive truth. But is such a shared, polyphonic narrative possible?

Julia Kristeva, after Bakhtin, discusses the emergence of the polyphonic novel, based on “a plurality of linguistic elements in dialogical relationships.” Gare extends this concept to the formulation of a polyphonic narrative concerning our relationship with nature through a philosophy that focuses on process, particularly process of growth and change, morphological processes. He suggests that the reason for this is because

…it is the shape-creating, organization-generating, aspect of process which ultimately allows people to do what they want, what they desire, what they need, and what is deeply adapted to life as it is lived and to experience as it is felt. The humanity of the environment comes about only when the processes are morphogenetic, are whole seeking, are placed in a context that gradually allows people to work towards a living whole in which each person plays a part.

However, intervention is required to begin this process, including a breaking down of the silos that separate many epistemological and educational fields, as well as communicating these newly holistic perspectives through narratives. As Gare suggests,

…[to] begin with, this would require a transcendence of fragmenting perspectives, a re-linking of ethics and political philosophy, of philosophy with the rest of culture: the arts, the humanities, the sciences, technology and the culture of everyday life, and of each of these with each other, in a way that would be easily comprehensible to ordinary people.

Communication in this way would undoubtedly require the effective use of rhetoric, as I have discussed. And highlighting the benefits of such a narrative, Gare suggests that,

Polyphonic narratives give a place to competing perspectives, competing versions of themselves, and a place for their continual questioning and reformulation by those who are living them out. The practice of democracy involves making these narratives and their

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752 Mathews, "The Eco-Genesis of Ethics and Religion", p.274.
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different versions explicit, socializing people to understand, choose between and commit themselves to these narratives, and then providing them with the knowledge and means to participate in questioning and revising them.\textsuperscript{754}

As we recall the importance that the use of rhetoric acquired in the young democracy of ancient Athens, its use in this transformation can also be appreciated as vital to motivate people to participation.

In addition, Deely quotes Bakhtin as supporting the power of dialogue in recognising a totality of expressions:

‘For the word is not a material thing but rather the eternally mobile, eternally fickle medium of dialogic interaction. It never gravitates toward a single consciousness or a single voice. The life of the word is contained in its transfer from one mouth to another, from one context to another context, from one social collective to another, from one generation to another generation. In this process the word does not forget its own path and cannot completely free itself from the power of these concrete contexts into which it has entered.’\textsuperscript{755}

Thus, the narrative acquires power through its expression, and it itself can transform to maintain this power in many different groups and contexts. And it is interesting that, as previously mentioned, Uexküll used the analogy of polyphony when describing ecological relationships:

The properties of the animal and the properties of its fellow actors harmonize in every case like point and counterpoint of a polyphonic choir. It was as if the same master’s hand had from time immemorial been gliding over the keys of life. One composition followed the next without end — some of them difficult, some easy, some splendid, some dreadful.’\textsuperscript{756}

\begin{footnotesize}
\footnotesize\textsuperscript{755} Deely, \textit{Basics of Semiotics}, p.69
\footnotesize\textsuperscript{756} Uexküll, “The Theory of Meaning”, p.69
\end{footnotesize}
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A polyphonic narrative concerning our relationship with the rest of nature, including the “voices” of nature itself, would need to, as Kristeva suggests, “constructs itself through a process of destructive genesis.”\(^{757}\)

Such a narrative, based on the ethical considerations of our community with the rest of nature, would incorporate what I have mentioned previously as, in Epstein’s words, “an ethics of possibility, not of duty [which may] consist of our creating possibilities for one another.”\(^ {758}\) And in this light we can consider further examples of models that exist for creating change.

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\(^{757}\) Kristeva, *The Kristeva Reader*, p.47

\(^{758}\) Epstein, *The Transformative Humanities: A Manifesto*, pp.53-55
Chapter 16: Anticipating the Worst, and the Best

In this chapter I discuss how anticipatory systems, as models, enable us to predict the need for change and implement changes in behaviour. I argue for the importance of visions of the future, expressed in narratives, that enable us to have not only a rational understanding of what we want (and do not want) from our society, but also a feeling for these visions and an emotional connection to them. Ideas of both dystopia and utopia are viewed as models springing from a set of assumptions contained in an ideology, but their power to reveal these assumptions and to influence change in the underlying ideology are also explored. I show how change can be accomplished, not by the imposition of order and regulations, but by a process of dialectic with these visions, incorporating a persuasive rhetoric that is firmly founded on Peircean metaphysics.

Anticipatory Systems as Models

AN ANTICIPATORY SYSTEM AS defined by Rosen is “one in which present change of state depends upon future circumstances, rather than merely on the present or past.” As Gare suggests, due to Rosen’s understanding of the need to recognise final causes, Rosen’s goal was to model anticipatory systems, “systems which do not simply respond to their environments but anticipate and respond to what will happen in the future.” Gare continues:

That physics at present has no place for the influence of future conditions and final causes indicates, Rosen argued, that it is too specific and conceptually limited, just as nineteenth

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759 Rosen, "Anticipatory Systems", p.v
century physics was too specific and conceptually limited to account for atomic spectra, radioactivity and chemical bonding. Just as to explain these required the conceptual revolutions of relativity theory and quantum theory, so a new conceptual revolution is required.\textsuperscript{760}

Understanding the character of anticipatory mechanisms in biology, may provide us with tools and other resources to do this. In addition, this will further illuminate the metaphoric relations between biology and social systems, which surely form critical components of our own anticipatory models.\textsuperscript{761} To suggest that anticipation is a primarily human characteristic is to define its reach on far too narrow terms, as I shall establish: first, by considering a systemic view of anticipation and then, by casting narrative as a form of modelling and demonstrating that the modelling inherent in narrative enables it to be operationally anticipative in the social and political world.

Anticipatory systems operate in physical, biological, cultural and political realms. In fact, Marie-Helene Caillol suggests that, in whatever human realm anticipation is applied, politics is implicit, as politics involves the management of people and all decisions impact individuals and society.\textsuperscript{762} Rosen describes a mode of control known as \textit{feedforward}, as opposed to the more commonly known \textit{feedback}, which takes information from the current state of the system and uses that to modify future behaviour. Feedforward includes the existence within the system of a predictive model of some aspect of the system and its environment and the use of the predicted model to modify the current behaviour of the system on the basis of anticipated future events.\textsuperscript{763}

\textsuperscript{760} Gare, "Overcoming the Newtonian Paradigm: The Unfinished Project of Theoretical Biology From a Schellingian Perspective", p.16
\textsuperscript{761} Rosen, "Anticipatory Systems", p.369
\textsuperscript{763} Rosen, "Anticipatory Systems", p.v
Considering the suggestion of the existence of anticipatory systems in the non-human biological realm, Rosen admits that the concept goes against the current biological causal explanatory paradigm and reintroduces a teleological element, largely missing since the onset of Modernity. Nevertheless, Rosen argues, many organisms successfully generate and maintain internal predictive models of themselves and their environments, and these models are used to anticipate future situations and take action in advance to ensure their survival. As humans, we gather and process information to enable us to predict and therefore react to anticipated threats and opportunities and, as I have established earlier, through the consideration of Peircian semiotics and the concept of synechism, information acquisition and interpretation is not confined to the human, nor even the biological realm, but pervades the organic and inorganic substance of the universe.

Judith Rosen further conveyed the central place her father accorded temporality in her introduction to Robert Rosen’s *Anticipatory Systems*:

> Living organisms have the equivalent of one “foot” in the past, the other in the future, and the whole system hovers, moment by moment, in the present — always on the move, through time. The truth is that the future represents as powerful a causal force on current behavior as the past does, for all living things.  

And in harmony with Peirce’s semiotics, Nobel prize-winning physicist Brian Josephson argues that the gap between observer participancy and physical reality can be filled in by anticipatory biosystems.

Biology, Josephson argues, is primarily concerned with patterns and only secondarily with quantities; through the operation of signs, these patterns are forward looking. It

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764 Ibid., p.xi
is this capacity for anticipation that makes possible the kinds of observations that construct systems as law-governed. Thus, an anticipatory system incorporates a predictive model of itself and/or of its environment, its Umwelt, which enables the system to change state in accord with predictions of the model. Let us consider some examples of anticipatory systems in the biosphere.

Although the concept of anticipatory systems in biology disturbs the causal paradigm on which most current scientific inquiry is based, Rosen suggests that biology is replete with situations in which organisms generate and maintain internal predictive models of themselves and their environments, and use the predictions of these models for purposes of control and flourishing in the present. This anticipatory paradigm may be applied to the study of many biological phenomena, including behaviour such as adaptation and learning, as well as to evolution.

As an example of an anticipatory system in the biosphere, Toxoplasma gondii (T. Gondii) is a common protozoan parasite which infects a wide range of warm-blooded vertebrates, including humans, and is transmitted by the ingestion of food or water contaminated with cat faeces. It can reproduce sexually only in the feline intestine and therefore other hosts are intermediate to its life-cycle. T. Gondii may be considered as an example of an organism that contains a predictive model, as demonstrated when rats ingest the parasite. When this happens the parasite migrates to the rat’s brain and there begins to have a cognitive and behavioural impact on the rat. The parasite settles in the rat’s amygdala, the part of the brain that processes fear and emotions, and when male rats

766 Rosen, “Anticipatory Systems”, p.313
767 Ibid., p.319
infected with T. Gondii smell cat urine they have altered activity in the amygdala and increased activity in the part of the brain that is responsible for sexual behaviour and which normally activates after exposure to a female rat.

Thus, it appears that the rat, instead of being fearful of its predator, develops some form of sexual attraction to it. Not only does T. Gondii carry its own anticipatory model of its Umwelt but it is able to alter the model of its host, subverting the narrative implicit in the model by inserting the double message of “you smell a cat but he’s not dangerous” and “that cat is a potential mate” to provide the optimal conditions for its own reproduction. As anticipation means the consideration of future events and therefore incorporates the possibility of planning for those events, then it may be suggested that T. Gondii, a single celled organism, arranges the conditions for its reproduction through a complex anticipatory model. There are many other examples in nature of these types of relationships, one of the most visible being the shedding of leaves by trees in Autumn in anticipation of colder weather to come.

Pattee notes that manipulation of events in the model may be termed as “anticipatory control,” according to Rosen. Uexküll argues that organisms, to be understood fully, need to be seen in a process of interaction with their Umwelt, or “surrounding world.” Gare, following Robert Rosen, suggests that this means that “they act on the

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771 Goldstein, The Organism: A Holistic Approach to Biology Derived From Pathological Data in Man, p.105
basis of a model of themselves situated within their environments,” with the implication that we can grasp how “complex systems incorporate models of themselves in their environments into their behavior, anticipating future events and correcting their behavior as new information sheds light on the anticipatory process.”\footnote{Gare, “Overcoming the Newtonian Paradigm: The Unfinished Project of Theoretical Biology From a Schellingian Perspective”, p.16} This gives further support to our assertion that humans can change their internal models of the natural world in response to visions of the future, and that this will lead to change in behaviour.

The current reactive paradigm for science is inadequate for dealing with the “wicked problem” of the global ecological crisis, as living systems are not merely reactive and the relationships between them cannot be properly understood in those terms.\footnote{Rosen, “Anticipatory Systems”, p.xi} In addition, as anticipatory models in political ideologies, instantiated in policies, also drive social and political decision making, the understanding gained may assist with identifying the barriers to the emergence of a truly ecological civilisation, and identify how new models can be developed that address the underlying issues that have caused our ecological and social crises.

We can also see an implicit connection to an ecological civilisation in all narratives, as they are all predicated on the existence of life. In an interesting discussion about the relationship of narratives to ecological thinking, Wright claims the following:

Narrative explanations [of human social relationships] always involve a reference to human life, which means they always involve a reference to the inherent goal of sustaining human life, and in this sense there is an apparent correlation between our conceptual dependence, as language users, on narrative explanations and our institutional requirement, as language users, for ecological explanations. In essence, narrative and ecological explanations must have the same formal structure.\footnote{Wright, Wild Knowledge: Science, Language and Social Life in a Fragile Environment, p.xiii}
So, if narratives about human social relationships always carry a message about “sustaining human life,” then narratives about the global ecosystem can carry a message about sustaining life in the biosphere. Therefore, as I have discussed, the development of a cohesive narrative is vital for the development of an ecological civilisation. As Rosen suggests, a model represents a subsystem of the original system, rather than the system itself, therefore dystopian and utopian visions, as forms of narrative, could be properly viewed as models. And an ideology, as a type of schema mediating social relations, could also be seen as a representative model of the world.

If a Utopian vision allows us to see an ideal future, or at least one that is better than the current reality, then an ideology is what attempts to keep us in the present way of living. Both are representations, one of the way society is, or “should be,” now; the other a representation of how society “should be” in the future. Obviously, both are a view from somewhere, and both carry with them the expectations of those who are interested in either maintaining or changing the status quo. As “representations,” both ideology and utopia are models, existing as narratives, and both can be considered as anticipatory systems, as generated and maintained by many organisms as predictive models used to anticipate future situations and take action in advance in order help them thrive in a particular environment — in this case, a cultural environment.

So let us now consider narrative as an anticipatory model of the future for the world, and see how the semiotic components of ideology as it relates to utopia and dystopia may enable us to see where the vision of an ecological civilisation may become a point of departure for change in currently dominant ideologies.

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775 Rosen, “Anticipatory Systems”, p.261
It may be timely to ask what is the dystopian vision that may be articulated based on the current dominant ideology? There are myriad dark visions that could be inspired by the current dominant ideology and these visions may be articulated merely by extrapolating current trends. Subservience of our relationship with the planet to “market forces” is leading to an ecological disaster. As a leading UK climate scientist said in an interview recently concerning a very likely scenario of a 4°C rise in average global temperatures,

This is a world that we have to avoid at all costs. Many scientists suggest that a 4°C rise is incompatible with an organised global community. It is beyond ‘adaptation’ (italics added). Yet this review of 4°C temperature rise does not take into account possible feedbacks and other discontinuities, which on average are anticipated to make the situation worse still.\(^{776}\)

Gare outlines several aspects of our current civilisation that could be seen as dystopian in themselves, and that are likely to become more strongly entrenched day by day.

For example, the situation that

...institutions supporting [cultural, scientific and educational fields] fields, most importantly, institutions of higher education, have been crippled, allowing only one hierarchy of status and power to exist — the hierarchy based on wealth and income — backed by increasingly large and technologically well-equipped security forces, [and also that] the collusion of governments and transnational agribusiness corporations to control food production, with corporations granted patents on genes of traditional crops developed by farmers over centuries, and ordinary farmers punished for trading their seeds [is leading to] food fascism — threatening the freedom of farmers and consumers and destroying the ecological, economic, and cultural foundation of food and agriculture.\(^{777}\)


\(^{777}\) Gare, “The Grand Narrative of the Age of Re-Embodiments: Beyond Modernism and Postmodernism”, p.341
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This is without even considering the rising international tensions and ensuing conflicts that are likely to result from scarcity of basic natural resources such as food, water and inhabitable land. But what would be the ideological basis of the utopian vision of an ecological civilisation?

Polak describes ideology as the myth of the dominant class; utopia as the myth of the rising class, but unlike a myth, which is absolute and sacred, utopia is open and indeterminate, and therefore relativistic. He also claims that:

Utopism is the forerunner of all modern conceptions concerning social policy, social organization, and social peace. All the art of social engineering could not place one stone upon another in the social edifice if the broad outlines of the system as an idea had not been projected long before, and if the seeds of the motivating ideals had not early been sowed in the hearts of men.\(^778\)

In a comment on Castoriadis’ work on the capitalist imaginary, Browne notes that “contrary to the ideological self-definition of capitalism, it is the imaginary, or the symbolic horizon of meaning which the imaginary institutes, that establishes the alleged rationality of capitalism and its apparent coherence as a systematic form of social organization.”\(^779\) Castoriadis describes the significations that comprise the social imaginary as like “invisible cement.”\(^780\) Browne, after Castoriadis, goes on to say that:

Like all social imaginaries, the capitalist imaginary is instituted in double form. First, there is the imaginary institution proper, that is, the institution of a web of collective significations and meanings. Second, there is the duplication at the level of institutions of the social imaginary or the symbolic form of capitalism. Of course, the distinction drawing attention to this duplication is entirely analytic, the two modalities of the imaginary are interlocked.”\(^781\)

\(^778\) Polak, *The Image of the Future*, pp.170, 178
\(^779\) Browne, "Castoriadis on the Capitalist Imaginary", p.282
\(^781\) Browne, "Castoriadis on the Capitalist Imaginary", p.283
Browne goes on to emphasise the subordinate role of rationality in the establishment of ideological meaning:

Social imaginaries involve the creation or “instauration” of symbolic “figures” and “forms” that…are neither real nor rational. Rather, these figures and forms establish horizons and frameworks of “world-interpretation.” In this sense, capitalism constitutes a horizon of meaning, as well as a set of social relations and social practices.

This “imaginary,” as its name suggests, is both symbolic and creative, and therefore can be recast by anticipation. This helps to explain the power of fictional utopian or dystopian visions to disturb, reconfigure or even destroy an existing, powerfully entrenched ideology. As Johann Arnason suggests, the imaginary significations can “remain open to other interpretations” due to their multi-form complexity of meaning. As an example, referring to Luis Prieto’s work on the the issue of knowledge, Alexandros Lagopoulos notes that point of view and pertinence impact on what is seen as correct and relevant knowledge. The relevancy of knowledge depends on the interests of the subject, who is historically and socially conditioned by ideology. The truthfulness (or otherwise) of knowledge which is irrelevant is not even considered, and as Lagopoulus explains:

The point of view adopted in respect to a material object is not imposed by the object itself. A material object may be seen from an indefinite, inexhaustible number of points of view.

As a dystopian or a utopian vision is a powerful agent in the production of change, I now wish to consider the semiotics of the relationship between ideology and utopia, particularly as described by Ricoeur.

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Ricoeur considers the dialectic between ideology and utopia as making a key contribution to the social imagination. Ricoeur sees ideology as having three semiotic levels, those of distortion, legitimation and integration. I have previously discussed the role of ideology in legitimation and integration, but with regard to the concept of ideology as distortion, Ricoeur provides a more complete view than Marx’s judgement that ideology represents the “‘reflexes’ and ‘echoes’ of the real process of life,”[784] that is the practice of living, its praxis. Ricoeur sees this distortion, though, as only the surface level of ideology, and suggests that ideology is more than simply a distorted representation of praxis, although this is certainly a fundamental component of it. In this respect, at least, there is no difference between ideology and utopia/dystopia — both are distortions of current praxis. [785]

As discussed previously, if humans are to be able to survive and thrive in harmony with the natural world, then we need to develop a form of civilisation that has ecology at its core. This implies that the role of an ecosystem as a home, a concept which is lived by the rest of the natural world, would need to be accepted by humanity not only rationally but also emotionally and viscerally. In a sense, then, we would share a culture with the rest of nature. MacIntyre discusses what it means to share a culture as well as how it is possible to move from a crisis of misunderstanding, to one of mutual recognition. To share a culture, according to MacIntyre, “is to share schemata which are at one and the same time constitutive of and normative for intelligible action by myself and are also means for my interpretations of the actions of others.”[786] As I have argued, a schema is a type of model

[786] MacIntyre, “Epistemological Crises, Dramatic Narrative and the Philosophy of Science”, p.1
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that both reflects and shapes our understanding of the world and our role in it, as well as
our relations with others.

To apply this to a civilisation that is ecological, this means that we and nature un-
derstand each other, and I suggest that this can be achieved at least partly through the
recognition of semiosis as pervasive throughout nature. As MacIntyre continues,

It is true that I cannot master these schemata without also acquiring the means to de-
ceive, to make more or less elaborate jokes, to exercise irony and utilize ambiguity, but it
is also, and even more importantly, true that my ability to conduct any successful transac-
tions depends on my presenting myself to most people most of the time in unambiguous,
unironical, undeceiving, intelligible ways. 787

And as I have argued, these are communicative abilities that we share with much of the
rest of nature. MacIntyre suggests that when this shared view of the world is lost, a new
narrative needs to be developed in order to recover it. I argue here that the development
of narratives around utopian visions is one of the ways to help us develop a common
culture with the rest of nature as an ecological civilisation.

In fact, utopian models, in their anticipatory aspect, challenge the dominant models
by enabling people to consider and model alternatives, as it were “trying them on for size”
through their emotional and rational participation in the narratives. A utopian narrative
can, if fact, form a new community. As David Carr expresses it:

A community in this sense exists by virtue of a story which is articulated and accepted,
which typically concerns the group’s origins and its destiny (italics added), and which in-
terprets what is happening now in the light of these two temporal poles. [...] The narra-
tive function is practical before it is cognitive or aesthetic; it renders concerted action
possible [and] it is literally constitutive of the group. [...] Arration, as the unity of story,

787 Ibid., p. 1
story-teller, audience, and protagonist, is what constitutes the community, its activities, and its coherence in the first place.788

And Carr adds: “What is grasped as common experience can be met by common action.”

I have previously discussed the role of ideology in the formation and maintenance of civilisation and Ricoeur considers the dialectic between ideology and utopia as making a key contribution to the social imagination, and so I now consider the relationship between ideology and utopia, examining the similarities and differences through a lens of Peircian semiosis, considering both as anticipatory systems and therefore (narrative) models. I can then describe some of the characteristics of a utopian vision of an ecological civilisation, comparing this in Peircian terms to the current dominant ideology and expand on the discussion of means of change from a semiotic viewpoint — not the specifics of change but the principles that would need to be considered in identifying specific changes that could be made to move towards the utopian vision.

If, as I have discussed, an ideology provides group identity and values that endure across space and time, despite the distortion inherent in the other levels of semiotic meaning, then it will be very difficult to rationally convince people that an ideology is harmful and needs to be changed or even abandoned. Castoriadis argues that the rational use of refutation and contradiction cannot provide an effective critique of an ideology. Any challenge has to take into account the complications of the human psyche and the semiotic processes by which the ideology has been constructed and is maintained. Castoriadis ob-

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serves that “archaic societies always seem to preserve a certain duplicity in their assimilations, but modern society takes them, in its practice, strictly literally in the most naïve fashion.”\textsuperscript{789} This adds to the challenge of bringing about change in modern society.

As Ricoeur confirms, ideology is, by its nature, resistant to change. It preserves identity and thus is attached to an existing order, particularly when its integrative function becomes “frozen” by “schematisation and rationalisation.”\textsuperscript{790} Browne suggests that although what he refers to as “new capitalism” — which is effectively the global spread of neoliberalism — claims that it is legitimately based on its rejection of hierarchical authority and promotion of individual freedoms, the falseness of this claim is difficult to see because of the global signification of progress. He fears that “the capitalist imaginary has colonised the future as well as the present order of globalisation.”\textsuperscript{791}

Examples of Dystopian and Utopian Narratives

As I have discussed, the concepts of dystopia and utopia are fictional narratives which enable us to imagine the way the world could be. Both point to the future, and describe a society or civilisation that has evolved into something worse or better than it is today. In fact, Ricoeur suggests that the role of utopian writing is not only to explore the possible, but it also carries an intentionality, a goal to bring about change by shattering the existing order.\textsuperscript{792}

\textsuperscript{789} Castoriadis, \textit{The Imaginary Institution of Society}, p.158
\textsuperscript{790} Ricoeur, \textit{Lectures on Ideology and Utopia}, p.266
\textsuperscript{791} Browne, "Castoriadis on the Capitalist Imaginary", p.296
\textsuperscript{792} Ricoeur, \textit{Lectures on Ideology and Utopia}, p.273
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The use of fictional utopian and dystopian visions to encourage or to warn about future implications of current ideologies is a function of what Ricoeur described as the social and cultural imagination, which can work to either preserve or disrupt an existing order.\(^793\) Frederick Polak described humans as citizens of two worlds, the real and the imagined world, and suggested that the future is born of the synthesis of the contrast or opposition between these two worlds.\(^794\) This dialectic between ideology and utopia and dystopia is a key contributor to change. In our interest in the formation of an ecological civilisation, this is an important component that must be considered. And if, as Ricoeur suggests, a death of utopian visions means a society with no goals, aspirations or projects — indeed, a dead society — then it is a vital component of change on the level of civilisation.\(^795\)

In addition, W. Stanley Jevons, a nineteenth century British economist, described the value of considering social experiments (including, presumably, fictional utopian and dystopian ones) as a guide to policymaking in the real world. Jevons associated this with acting tolerantly, and articulated his position thusly, “We must consent to advance cautiously, step by step, feeling our way, adopting no foregone conclusion, trusting no single science, expecting no infallible guide.”\(^796\) Polak goes so far to suggest that “the rise and fall of images of the future precedes or accompanies the rise and fall of cultures (italics in original),” and he notes the important role of utopian visions in 18th and 19th century France in informing

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\(^793\) Ibid., p.265
\(^794\) Polak, *The Image of the Future*, p.1
\(^795\) Ricoeur, *Lectures on Ideology and Utopia*, p.180
and initiating three different revolutions which brought about massive changes in society, government and other institutions between 1789 and 1848.\textsuperscript{797}

An interesting example of this, provided by Robert Darnton,\textsuperscript{798} is the book \textit{L'An 2440} (The Year 2440), published in 1771, and described as “the supreme best seller” of the period, being published in at least 25 editions during a time when “the most important works of the Enlightenment appeared and…Rousseau carried the Enlightenment beyond the sophisticated circles to which it had been confined in the first half of the [18\textsuperscript{th} Century].” The author was Louis-Sébastien Mercier, but the book was considered so subversive that Mercier did not claim authorship until 20 years after its original publication.

The narrator of the novel, a man 700 years old, provided mundane details of everyday life that provided an indictment of the \textit{Ancien Régime}, with extensive footnotes that were “designed to provoke moral indignation” against the old order. However, Darnton notes that the book “hardly constitutes a blueprint for a new kind of society” but rather promotes the foundations of this new France in a “general spirit of equality and civic virtue” which also includes “a state of perfect transparency” where citizens continually probe and question the values and conduct of one another in order to maintain this harmonious existence. As one character, caught out in villainy, explains to his valet, “You can’t get away with the slightest injustice without [another citizen] noticing it. An artful mask will not shield our true face from the most penetrating looks.”

\textsuperscript{797} Polak, \textit{The Image of the Future}, pp.31, 110
Huxley’s novels Brave New World and Island, published in 1931 and 1962 respectively, articulate two different and somewhat pessimistic views of humanity’s future. Brave New World is pessimistic in the sense that it shows human civilisation as a whole in a dystopian future; Island in that it places a utopian society as geographically isolated, and under threat from an exploitative, wider world civilisation, which in the novel sends a journalist to investigate the small community’s untapped oil reserves. However, we can refer to the societies depicted in both books as “civilisations.”

In Brave New World as this depicts the majority of the world’s population as united in the ‘World state’ and in Island as, although the community is small, it is geographically and culturally isolated from the rest of the world and exhibits a strongly cohesive set of values, customs and social relations. There are, of course, many differences between the two civilisations depicted in the novels. One is repressive, industrialised, restrictive and coercive. The other is idyllic, pastoral and liberated. However, one of the key differences from which many aspects of the two civilisations flow is in the use of psychoactive substances by citizens — in both civilisations these form an integral part of the society and its values.

The drug soma is used in Brave New World to induce a state of compliance and happiness in the citizens. In the words of one of the characters: “If ever, by some unlucky chance, anything unpleasant should somehow happen, why, there’s always soma to give you a holiday from the facts.” Soma seems to produce a detachment from the self and from the reality of daily life, and characters in the novel seem to use it to get away from

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801 Huxley, Brave New World, p.217
any situation or experience that might induce self-reflection or self-awareness. Soma is distributed by the ruling classes in order to maximise contentment and solidarity in the productive service of the state.

In Island a substance named moksha-medicine — the Sanskrit term moksha meaning liberation — is used to sharpen and deepen consciousness and with it, increased awareness of internal thought processes, and of relationships with other citizens and the external world. In the novel, moksha-medicine is also known as the “reality revealer.” The two contrasting descriptions of these substances as “a holiday from the facts” and a “reality revealer” point to the role of semiotic distortion in sustaining the underlying ideology of a civilisation. And if semiotics itself is a utopian project, as Eco claims then it becomes a valuable tool in the enquiry into utopian/dystopian visions and their value.

As I have discussed, the concepts of dystopia and utopia are fictional narratives which enable us to imagine the way the world could be. Both point to the future, and describe a society or civilisation that has evolved into something worse or better than it is today. In fact, Ricoeur suggests that the role of utopian writing is not only to explore the possible, but it also carries an intentionality, a goal to bring about change by shattering the existing order.

Using two fictional narratives by Huxley, we can examine the difference between dystopian and utopian visions of the future and identify commonalities. We can also ex-

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803 Huxley, Island, p.192
804 Sebeok, "Zoosemiotic Components of Human Communication", p.252
805 Ricoeur, Lectures on Ideology and Utopia, p.273
amine how all both dystopian and utopian visions reflect underlying ideologies, and determine how both are forms of civilisation that differ from the current form. Examining dystopia and utopia in terms of Peircian categories can also help us to see the value of these concepts in the development of an ecological civilisation, as both can be used to raise the possibility and consciousness of change and to highlight the impact of changing in particular directions.

The use of fictional utopian and dystopian visions to encourage or to warn about future implications of current ideologies is a function of what Ricoeur described as the social and cultural imagination, which can work to either preserve or disrupt an existing order.806 Frederick Polak described humans as citizens of two worlds, the real and the imagined world, and suggested that the future is born of the synthesis of the contrast or opposition between these two worlds.807 This dialectic between ideology and utopia and dystopia is a key contributor to change. In our interest in the formation of an ecological civilisation, this is an important component that must be considered. And if, as Ricoeur suggests, a death of utopian visions means a society with no goals, aspirations or projects — indeed, a dead society — then it is a vital component of change on the level of civilisation.808

In addition, W Stanley Jevons, a nineteenth century British economist, described the value of considering social experiments (including, presumably, fictional utopian and dystopian ones) as a guide to policymaking in the real world. Jevons associated this with

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806 Ibid., p.265
807 Polak, The Image of the Future, p.1
808 Ricoeur, Lectures on Ideology and Utopia, p.180
acting tolerantly, and articulated his position thusly, “We must consent to advance cautiously, step by step, feeling our way, adopting no foregone conclusion, trusting no single science, expecting no infallible guide.” Polak goes so far to suggest “the rise and fall of images of the future precedes or accompanies the rise and fall of cultures (italics in original),” and he notes the important role of utopian visions in 18th and 19th century France in informing and initiating three different revolutions which brought about massive changes in society, government and other institutions between 1789 and 1848.

The schema forms a type of model that reflects and shapes our understanding of the world. The psychological concept of the schema could be seen in terms of the social relations which it mediates as ideology. However, a key difference between the utopian and dystopian societies, as illustrated by Huxley by the different substances used to sustain the two ideologies, is that in the case of the dystopia that is Brave New World, soma creates a barrier between the Firstness of experience and feeling and the external world, whereas moksha-medicine is designed to dissolve that barrier and facilitate a harmonious relationship between the culture in the Island civilisation and the natural world.

Considering the neoliberal ideology whose influence is increasing world-wide as forming the basis of our current civilisation, and which Harvey refers to as a “utopian project” we might find parallels to the use of soma in the promotion of consumerism and the rise of what Guy Debord refers to as Society of the Spectacle, where he describes spectacle as “the sun which never sets over the empire of modern passivity [and] covers

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809 Jevons, cited in Roe, Narrative Policy Analysis: Theory and Practice, p.150
810 Polak, The Image of the Future, pp.31, 110
811 Harvey, A Brief History of Neoliberalism, p.70
the entire surface of the world."\textsuperscript{812} Or as Polak puts it, “Our civilisation sits in sickly narcissism...spellbound by its own image.”\textsuperscript{813} 814

Castoriadis, too, according to Browne, suggests that “the capitalist imaginary entails a process of emptying the world, experience and subjectivity of meaning. Of course, it also generates meanings and values, so the loss of meaning takes the specific form of an indifference to things inherent in the logical order of capitalism.”\textsuperscript{815} The identification of what might form the cultural equivalent of moksha-medicine might be a valid step towards an ecological civilisation.

So let us examine in more detail the way in which an ecological civilisation might be seen as utopia, and how that might assist us in making the transition to this new ideology. This is precisely the area where a utopian vision is needed to support a breakthrough of the imagination into \textit{praxis}. But how is imagination translated into action; how can a vision become reality?

\textsuperscript{812} Guy Debord, \textit{Society of the Spectacle} (Detroit, MI: Black & Red, 1977, para. 13
\textsuperscript{813} Polak, \textit{The Image of the Future}, p.299
\textsuperscript{814} It seems that the “selfie stick,” a device for holding a camerapone at a sufficient distance to enable the holder to take a well-composed picture of themselves, has now been dubbed “the wand of Narcissus.” (See "Wand of Narcissus", \textit{Urban Dictionary}, http://www.urbandictionary.com/define.php?term=Wand+of+Narcissus (accessed January 5, 2015))
\textsuperscript{815} Browne, “Castoriadis on the Capitalist Imaginary”, p.287
Chapter 17: Ecological Civilisation as Utopia

Ideology is most effective when all citizens – in this case all citizens of the semiosphere – have had a role in its formation. However, to bring into question existing beliefs and practices and provide new ideals to aspire to, utopia is also necessary. This is particularly important in the present where the prevailing ideology has been revealed to be fundamentally defective, but people have lost their capacity to envisage any viable alternative to the present order. In this chapter I summarise the utopian vision of an ecological civilisation based on Peirce’s Categories of Being, considering its ethical basis, as founded on a natural aesthetic, and the role that reason and rationality would play in an ecological civilisation.

Ideology, Narrative and Political change

SO LET US EXAMINE now what might be called the anticipation of ideology; a vision of the best possible future. Ricoeur, following Mannheim, suggests that there are three methodological rules towards the establishment of a utopian vision. First, the utopian concept needs to be able to be generally conceived so that it may be able to be applied across a broad social landscape; second, the utopia needs to be the discourse of a group, associated with a social stratum; finally, it needs to express a “dominant wish,” expressed as an “overarching symbolic system” — something which is “more felt than thought” and “a directly intelligible set of meanings.”

These rules suggest that a utopian vision expressed solely in terms of reason and rationality is unlikely to be able to support a vision that will translate into action.

Ricoeur, Lectures on Ideology and Utopia, pp.269-284
As Ricoeur expresses it, the dynamics of utopia are primarily emotional, an impulse “yielded by the conjunction of ideal and demand,” with an energetic expectation of the instantaneous destruction of the ideology to which it is opposed but out of which it sprang. He also notes that “utopia represents the dissolution of obstacles. The **magic of thought** (italics added) is the pathological side of utopia and another part of the structure of imagination.”\(^{817}\)

To be utopian, a vision of the future needs to be deeply appealing, and to engender popular support, it needs to appeal to as many people as possible. As Gare notes, currently, there seems to be only two visions that are offered. With no change to the status quo, through greater and greater consumption, the human economy and population keep growing, and ruination of the environment continues apace until some magical technological solution is found. The current environmentalist point of view calls this out as dystopian, but seems to offers “in its place a kind of lifelong global celery diet.”\(^{818}\) This does not meet the criteria of a utopian vision. But as Gare continues:

> Ecology is developing the forms of thinking required to rethink the relationship between humanity and nature and between individuals and their communities, the nature of culture and civilization, and thereby to transform the way people live and organize themselves. It provides the basis for a different vision of the future, with a different kind of ethics and political philosophy than those which have dominated modernity. That is, ecology is developing the forms of thinking required to create an ecological civilization.\(^{819}\)

And as I have discussed, human ecology provides an even better way to develop a vision for a future civilisation. The importance of an ideology underpinning this vision is also described by Gare, as I have mentioned before, that,

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\(^{817}\) Ibid., p.296  
\(^{818}\) Gare, "Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis", p.3  
\(^{819}\) Ibid., p.3
[c]ivilized societies differ from uncivilized societies in the complexity and coherence of their cultures and ideals and thereby in the degree of complexity of their organization, and, most importantly, the degree of cultivation of its members required to uphold these ideals and to participate in these complex societies.  

Only an ideology can enable the societal comprehension, retention, transmission, and particularly the cultivation of a complex set of feelings, ideas and instituted order. As a model, supported by polyphonic narratives, it is easily adaptable to specific instances of the ideology being applied in action.

For example, looking back to the origins of democracy, Markley cites notes that

…[to] the Greek, the city-state was not merely a legal structure; it was a way of life. Every aspect of daily existence was intimately connected with it. The individual derived his importance from his relation to the state; he was viewed as a citizen who depends on the state and who can contribute to its welfare.

However, this connection certainly does not seem to exist today and therefore we may briefly consider how political action can be accomplished in a postmodern world.

Emery Roe, for one, suggests that the analysis and development of political policies is intimately tied to the construction and interpretation of narrative to explain the need and build support for change, and Michael Glantz suggests that political change can be affected what he calls CSA (Case Scenario Approach), where “scenarios” are narratives and the inputs to these are “myths, legends, anecdotes, historical facts.” And it is of great interest that when Peirce talks about the consideration of conduct, and how it creates a feeling which enables one to judge the conduct on an ethical basis, he says:

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820 Ibid., p.5
821 Markley and Harman, Changing Images of Man, p.47
822 Roe, Narrative Policy Analysis: Theory and Practice
To say that conduct is deliberate implies that each action, or each important action, is re-reviewed by the actor and that his judgment is passed upon it, as to whether he wishes his future conduct to be like that or not. His ideal is the kind of conduct which attracts him upon review. His self-criticism, followed by a more or less conscious resolution that in its turn excites a determination of his habit, will, with the aid of the sequelæ, modify a future action [...] yet the quality of feeling (for it is merely a quality of feeling) is just the same, whether his own conduct or that of another person, real or imaginary (italics added). (CP 1.574)

This passage from Peirce supports our assertion that the “imaginary” of a utopian vision can move to action without it being necessary to spell out all steps to implement it.

Glantz enumerates the advantages of this strategy as compared to a rigid approach to policy development, as including the wealth of detail that can be carried by stories, which are about “worlds” and incorporate the projection of individual preference into a unifying framework; the integration of a broad range of knowledge, hard to express explicitly but which is carried implicitly by a story; and the ability to illuminate multiple perspectives, particularly beneficial as where inconsistency becomes and valuable resource; and finally a story’s “communicability and usability” — where the inclusion of quantative data tends to derail discussion. There is far less resistance to appreciating a story over an argument or assertion, and this may enable us to move from our current “system” society, to a social society that considers all citizens of the biosphere as significant.

Narratives enable us to identify with the participants or characters, and we can see ourselves as part of an unfolding process, as the narrative, as a model that abstracts reality, enables us to “fill in the gaps.” As Carr argues:

We have an experience in common when we grasp a sequence of events as a temporal configuration such that its present phase derives its significance from its relation to a

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824 Ibid., p.82
825 Steiner, "Human Ecology As Transdisciplinary Science, and Science As Part of Human Ecology", p.482
common past and future. To engage in a common action is likewise to constitute a succession of phases articulated as steps and stages, subprojects, means and ends. Social human time, like individual human time, is constructed into configured sequences which make up the events and projects of our common action and experience.\textsuperscript{826}

And if this narrative includes all the inhabitants of the semiosphere, then a radical transformation can occur. Let is consider how this occurs by a review of Peirce’s metaphysics as it relates to action.

The Aesthetics and Ethics of an Ecological Civilisation

Gare describes several attributes that would be needed to be able to call a civilisation “ecological,” and that these would be a mixture of freedoms and constraints, with a central place for community. For example, people would have to be free from enslavement to forces of the market by ensuring that markets are cast as instrumental to the overall health of communities. In this order, Gare suggests that

\[\ldots\text{people need to constrain themselves by their commitment to truth and justice, their appreciation of beauty, and the need to harmonize these, and lured by the challenge posed by their communities’ problems to adventure on new paths into the future.}\textsuperscript{827}\]

This “constraint” is, as I have discussed, equivalent to Peirce’s habit-taking, cultivated through an appreciation of aesthetics and ethics. As expressed by Antoine de St. Exupéry:

\[\text{If you want to build a ship, don’t herd people together to collect wood and don’t assign them tasks and work, but rather teach them to long for the endless immensity of the sea.}\textsuperscript{828}\]

But how does this “longing” and “commitment” lead to action?

\textsuperscript{826} Carr, “Narrative and the Real World: An Argument for Continuity”, p.127
\textsuperscript{827} Gare, “Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis”, p.19
\textsuperscript{828} de Saint-Exupéry, \textit{The Wisdom of the Sands}
When considering Firstness as aesthetics, we should remember the characteristics of Firstness as pure undifferentiated response to the *phaneron*, feeling without conditioning or evaluation, and incorporating the infinity of possibility. As mentioned earlier, Peirce expressed that feeling has a tendency to spread out continuously, and affect other feelings—be this in the same individual or in a social sense. In this process it enters into a network with other feelings, again indicating the power of Firstness to influence (CP 6.104). By definition, something that is aesthetically good has an intrinsic quality that is attractive. Sorensen *et al.* note that

Peirce proposed three ways in which the idea may be attractive to man. First, a community holds the idea, and then transfers the idea to the individual, which otherwise is in no position to discover the idea; second, by an individual discovering the idea, but only because the individual is feeling sympathetic towards a community such that the sympathy allows him to experience the attraction of the idea. Third, the individual discovers the idea by force of the idea’s own attractiveness.  

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Other thinkers support this assertion. Ricoeur’s words about a utopian vision, that it should be “more felt than thought” and that is should carry “a directly intelligible set of meanings” also support the importance of undifferentiated feeling in any utopian vision. 830 And when Bakhtin and Medvedev refer to works of art as among “the products of ideological creation,” 831 they reinforce the value of aesthetics in the development and communication of the utopian vision. It is interesting to note that the moksha-medicine that forms an integral part of the utopian society in Huxley’s *Island* is associated with increased awareness of feeling and aesthetic values, as it enables “an art which...can yet be practiced by everyone — the art of adequately experiencing, the art of becoming more

829 Sørensen, Brier and Thellefsen, “Cosmos and Creativity: Man in An Evolving Universe As a Creative, Aesthetical Agent — Some Peircean Remarks”, p.222
830 Ricoeur, *Lectures on Ideology and Utopia*, p.274
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intimately acquainted with all the worlds that, as human beings, we find ourselves inhabiting." With regard to the primacy of feeling over thought, Huxley describes one of the characters, under the influence of moksha-medicine, as follows, “Like a Logical Positivist, he was thinking in the shallows of his mind, while in the depths the great Event of light and sound tunelessly unfolded.” This Firstness of an ecological civilisation would need to support, to paraphrase Huxley, an “intimate acquaintance,” based in experience, with the natural world.

With regard to Peircian Secondness, expressed as the Ethics of an ecological civilisation, an interesting viewpoint is found in the work of Leopold who, in the paper *Land Ethic*, published in 1949 as the finale to *A Sand County Almanac*, attempted to define a new relationship between people and nature. Leopold summarises it thus:

A land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.

Leopold grounded this ethic in what could be cast as a strongly Peircian concept, in the idea of *love* for the land, an agapastic development. He continues,

This sounds simple: do we not already sing our love for and obligation to the land of the free and the home of the brave? Yes, but just what and whom do we love? Certainly not the soil, which we are sending helter-skelter downriver. Certainly not the waters, which we assume have no function except to turn turbines, float barges, and carry off sewage. Certainly not the plants, of which we exterminate whole communities without batting an eye. Certainly not the animals, of which we have already extirpated many of the largest and most beautiful species.

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832 Huxley, *Island*, p.195
833 Ibid., p.308
834 Leopold, *A Sand County Almanac: Outdoor Essays & Reflections*
These examples powerfully illustrate the semiotic displacement and distortion encapsulated in an instrumental view of the natural world. The ethics of an ecological civilisation would need to be tied closely to the Firstness of feeling, and reflect that with action.

Tuan provides an example of ethics in the treatment of animals used for food by Inuit people of the Canadian Arctic and the Nuer people of Sudan. In both cases, the killing of animals for food is marked by a feeling of remorse accompanied by respectful actions. For example, the Inuit believe that a freshly killed seal should not be lain on a dirty floor, and will pour some water in its mouth in recognition of a spiritual element within the seal that may feel thirst after death of the body. The Nuer will only eat the flesh of an animal that has been slaughtered with appropriate ceremonial or sacrificial rites and even then will declare their empathy with their prey, expressing that their own “eyes and heart are sad, [although] the teeth and stomach are glad.”

Following on from his description of the “land ethic,” Leopold strongly associated ethics with actions, simply stating, as mentioned previously, that: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.” Note also that he includes aesthetic criteria in the ethical evaluation of action. Actions are often both enabled and constrained by order, logic and legislation, aspects of Peirician Thirdness, and the utopian vision of an ecological civilisation needs to include ideas of the political and legislative structures needed to implement and sustain it.

Gare suggests that a properly constituted democracy would enable alignment of the Firstness and Secondness of the vision, as it would require participation by citizens who

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835 Tuan, *Human Goodness*, p.135
836 Leopold, *A Sand County Almanac: Outdoor Essays & Reflections*
have an understanding of “history, philosophy, the arts and post-reductionist science aligned with the humanities” and that this will enable people “to appreciate at a visceral level, that is, to feel the significance of their own and other lives and their relationship to the world around them, and to enable them to coordinate their orientations and actions.”  

In addition, instead of a legislature and judiciary based on a neoliberal ideology which favours the rich and powerful and seems to protect the right of property above all else, and a punitive system that is increasingly market-driven, Sturm calls for a “jurisprudence of solidarity” rather than a “jurisprudence of individuality.” This means that rights are not defined as primarily individualistic in opposition to community, but that rights are an achievement of communities that promotes their health. As Browne suggests, “it is possible to...envisage the subordination of the capitalist economic system to public deliberation and a wider cultural horizon of meaning oriented to equality as well as individual and collective autonomy.”

Although Ricoeur gives many other examples of utopian movements, perhaps the chiliastic model is the most useful for consideration of the semiosis of ideology, utopia and dystopia in relation to this project, as it is triggered by oppression, encouraged by an idealistic vision, and is powered by the emotional “conjunction of ideal and demand.” So, let us return to the utopian movement indicated by Ricoeur as providing a model for utopian change generally, the 16th century chiliastic utopia of the Thomas Münzer. And,

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837 Gare, “The Grand Narrative of the Age of Re-Embodiments: Beyond Modernism and Postmodernism”, p.345
839 Browne, “Castoriadis on the Capitalist Imaginary”, p.297
840 Ricoeur, Lectures on Ideology and Utopia, p.296
interestingly, Ricoeur gives the example of a 16th century utopian movement to provide a model for all utopias. This is the chiliastic utopia of the Anabaptist Thomas Münzer, the utopia of a heavenly government descending to rule the earth.

As mentioned, Ricoeur suggests that it was “yielded by the conjunction of ideal and demand” and it was energised by the largely emotional expectation of “the dissolution of obstacles.”841 Was it “the magic of thought,” and the failure of the irrational expectation of the return of Christ to earth, and his expected support in the Battle of Frankenhausen that led to its disastrous failure? It certainly would be futile to hope for miracles in the battle against semiotic distortion, a distortion that has been fuelled by the ideology of neoliberalism, but there are some positive lessons to be learned about turning a desire for change into action.

Bringing together “ideal and demand” by communicating a utopian vision that shows how the ideal may be able to be turned into reality, engaging the emotions of those who comprise the “oppressed underclass”—in current terms “the 99%”—and providing a visceral sense of hope that a “dissolution of obstacles” is indeed possible. All these would seem to be vital elements for enabling change that we will consider in more detail. And Huxley’s moksha-medicine, the key to increasing awareness of relationships with other citizens and the external world? It is important to consider this, not literally as a psychoactive substance, but as a way of sharpening and deepening consciousness of our relatedness to others, making explicit the awareness of our Umwelt, and considering how this shapes our actions. A rationality that is based on a foundation of empathetic Firstness and the inclusive ethics of Secondness would appear to support this development.

Creative Rationality

841 Ibid., pp.257, 296
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As Gare has pointed out, it is the dialectic of recognition that is most important for creating complex institutions and forms of organisation with stable role relationships that are sustained over generations. But the institutions we have now, increasingly, hardly recognise other humans as subjects, let alone grant moral status to the non-human. From what place, then, can come a remodelling, a way for institutions to grow and change into those that will support and sustain an ecological civilisation?

This does not mean spelling out in detail the specifics of a solution. Gare suggests that a more realistic and holistic approach to rationality than the instrumentalist rationality that reduced the world to a “collection of predictable objects to be used efficiently” would be an approach based on “creative rationality.” This involves recognising that we dwell in a world of “self-creating processes with various degrees of autonomy, stability and dependence,” and “requires a recognition of the continuously creative nature of this becoming…in which one is participating, and of the possibility and the likelihood of emergent novelty.” The aim of creative rationality is

…the creation of the structures which will facilitate the shaping by people of their lives. To have power is to have the means to develop ones understanding of the world and oneself, and to be situated within structures through which this understanding can be spontaneously and creatively expressed.

This, according to Gare, enables us to redefine notions of power and control, removing total control from its current place as the most desired end of rational processes, and allowing place in the rational world view for autonomy and creativity. And this would included the institutions of the ecological civilisation.

As an example, Bosselmann et al. note that

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842 Gare, “Towards An Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis”, p.14
843 Gare, Nihilism Inc: Environmental Destruction and the Metaphysics of Sustainability, pp.382, 383
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...[the] ultimate health-governing strategy does not exist. Nevertheless, many variable views and strategies can be combined to meet actuality and to define flexible paths and visions for future strategies.

They describe this as “adaptive quality [which is] ever balancing ecological, economic and social capital for the benefits of present and future generations.”

Robert Chia and Robin Holt suggest that broader political and business strategies can emerge “non-deliberately through a profusion of local interventions directed towards dealing with immediate concerns.” They refer to this as “strategy without design.” They correlate this idea of self-organisation with Maturana and Varela’s autopoiesis, “as a self-referential and self-constituting feature of an organism’s response to its surrounding environment.” And Marco Verweij, Mary Douglas et al. suggest what they refer to as “clumsy solutions” where, for example,

Clumsy institutions are those institutional arrangements in which none of the voices — the hierarchical call for ‘wise guidance and careful stewardship’, the individualistic emphasis on ‘entrepreneurship and technological progress,’ the egalitarian insistence that we need ‘a whole new relationship with nature,’ and the fatalist’s asking ‘why bother?’ — is excluded, and in which the contestation is harnessed to constructive, if noisy, argumentation.

Abram takes a similar view when he suggests that a new way of thinking and acting towards the rest of nature

...will come into existence not primarily through the logical elucidation of new philosophical principles and legislative strictures, but through a renewed attentiveness to this

844 Bosselmann, Westra and Westra, Reconciling Human Existence with Ecological Integrity: Science, Ethics, Economics and Law, p.126
846 Ibid., p.51
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perceptual dimension that underlies all our logics, through a rejuvenation of our carnal, sensorial empathy with the living land that sustains us.848

This requires, as I have discussed, a new approach to ethics and therefore a new set of values. As Amartya Sen suggests, we obtain our values from four sources: Our own reflection and analysis, our tendencies to follow established mores, which often extends the reach of reasoning beyond our own capacity to reflect rationally on our choices, but this is also subject to influence public discussion, thus dialectic, which Sen recognises is “social, intellectual and creative,” and finally evolutionary selection — a step we hope to avoid by moving towards an ecological civilisation. Sen also notes that public policy making also needs to consider ethical values for two reasons as, for example, justice is conceptually important to the identification of the objectives of public policy and how it will be implemented, but also that public policies depend on the behaviours of individuals and groups in society. In order to make this transformation, the most important area of both personal and political/public change is that of education, and the need to create a “learning society.”849

As Markley, after Robert Hutchins, suggests

…”the learning society” [is] one that will have transformed...its values in such a way that learning, fulfillment, becoming human, had become its aims and all its institutions were directed to this end. This is what the Athenians did.... They made their society one designed to bring all its members to the fullest development of their highest powers... Education was not a segregated activity, conducted for certain hours, in certain places, at a certain time of life. It was the aim of the society.... The Athenian was educated by the culture, by Paidea.850

As I have mentioned previously, this learning needs to include what Wheeler refers to as “[e]nvironmental literacy [, which] must be understood to encompass natural, social,

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848 Abram, The Spell of the Sensuous: Perception and Language in a More-than-human World, p.69
850 Markley and Harman, Changing Images of Man, p.174
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cultural and, by implication, emotional literacy also.\(^{851}\) This would include education in the importance of social connections and the value of society as a whole. This is fully supported by Peirce’s philosophy, as mentioned previously. As Tarr notes, “Peirce…criticized our institutions of higher learning for failure to encourage students to assume their responsibility as part of the social organism [and] chastised our colleges for promulgating the philosophy of individualism and for teaching students to be concerned primarily with their own economic advantage.”\(^{852}\)

This rationality, though, is based on a more fundamental characteristic of nature, that is, according to Peirce, agapism, what he refers to as “the law of love” (CP 6.302).

Recognition and Reason: A Dialectic of Love

Epstein suggests that it is possible to cast nature “in a double ethical relationship with humans…as both their mother (progenitor [or Creator]) and neighbour (environment).” He suggests the term “ecognition” which

…involves the ethical recognition and theoretical reconstruction of pre-cultural beginnings in the very unfolding of culture, …the recognition of the ecological premises of all human activities, an attempt to restore and honor the conditions of their possibility.\(^{853}\)

This idea of “recognition” can also be seen in the work of Ron Engel when he argues that the metaphor of our relationship with the rest of nature should reflect a relationship of covenant. He notes that

…this is a metaphysical as well as an empirical claim. It involves an intuition that the inclusive wholes in which we participate are ultimately covenantal in character, which is to say that the cosmos, the Earth and the places we inhabit are integrated with an integrity

\(^{851}\) Wheeler, The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture, p.155
\(^{852}\) Tarr, "Roots and Ramifications: Peirce’s Social Thought ", p.242
\(^{853}\) Epstein, The Transformative Humanities: A Manifesto, p.86
not of a machine, or an organism, but of a community composed of semi-autonomous beings, each of value to itself, to the others and to the whole, and bound by mutual loyalties to the fulfilment of every member and the relationships that join them.\textsuperscript{854}

Engel’s metaphor is based on the Biblical conception of a covenant, as a binding agreement between God and man, for example the Noahic covenant, when God promises not to destroy the earth by flooding again, and provides the rainbow as signifier of this agreement (Genesis 9:12-17).

Engel refers to Derrick Jensen who, after describing the dire straits of humanity and the environment, explains what sustains him through this darkness: "‘I’m in love’, he writes, ‘with salmon, with trees outside my window, with slender salamanders crawling through the duff. And if you love, you act to defend your beloved.’” The metaphor of a covenant speaks of a morality based on love, an ethic based on feeling that shapes a rationality of action reflecting that feeling. Engel concludes: “At this moment of Earth’s history, the metaphysical-moral vision of covenant is an especially illuminating and rich metaphor for both describing the biosphere and prescribing our relationship to it and to one another.”

The metaphor of a covenant, with its incorporation of the sacred, could also provide institutions with a different level of influence than that they hold in a secular society. As Douglas makes application of Durkheim, “All other controls exerted by institutions are invisible, but not the sacred.” Douglas also suggests that the sacred is identified by the following characteristics:

[First], it is dangerous — if profaned terrible things will happen, the world will break up and the profaner will be crushed; [Second], any attack on the sacred rouses emotions to

its defines; [Finally], it is invoked explicitly — words, names, places, books, flags, totems. it is an artefact of society, a necessary set of conventions resting on a particular division of labour — *the sacred makes a fulcrum on which nature and society come into equilibrium* (italics added).  

In addition, Mathews speaks of the poetic, which could be seen as a combination of narrative with the metaphoric, as key to the reconfiguration of the practical aspects of our relationships with the rest of nature, as she argues that, “the praxis of sustainability needs to incorporate the poetics of communicative engagement.” She applies this to the sources of energy and of food, and her language evokes a relationship that goes for beyond “sustainability”:

>Sun, wind, tides and so on — need to be mythed, storied, personified for the purposes of invocation; sources of sustenance — plants and animals — need to be sung and thanked. The transactions with the world whereby we ensure our own self-maintenance need at the same time to be invitations to conversation, to poetic collaboration. In other words, praxis is always a matter of poetics as well as pragmatics: the poetics expand our pragmatic imagination while the pragmatics offer endless opportunities for poetics.

This personification strongly reflects the concept of the “ecology of selves” that I have discussed.

**The Power of Poetic Activism**

I have earlier mentioned T. S. Eliot’s observation that modernity brought a “disso- ciation of sensibility” in poetry. But this was not confined to poets and authors of the 18th century. He makes an application of this change to humanity in general, with the role of the poet being to heal this dissociation, as he says:

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855 Douglas, *How Institutions Think*, p.113
856 Mathews, "Beyond a Materialist Environmentalism", p.3
When a poet’s mind is perfectly equipped for its work, it is constantly amalgamating disparate experience; the ordinary man’s experience is chaotic, irregular, fragmentary. The latter falls in love, or reads Spinoza, and these two experiences have nothing to do with each other, or with the noise of the typewriter or the smell of cooking; in the mind of the poet these experiences are always forming new wholes.

He urges a type of activism on poets:

We can only say that it appears likely that poets in our civilization, as it exists at present, must be difficult (italics in original). Our civilization comprehends great variety and complexity, and this variety and complexity, playing upon a refined sensibility, must produce various and complex results. The poet must become more and more comprehensive, more allusive, more indirect, in order to force, to dislocate if necessary, language into his meaning. 857

Eliot seems to be urging a return to the sensibility manifest in the Romantic era, echoing an ancient recognition of the importance of experience in understanding the world. As mentioned previously, Peirce described himself as a “Schellingian of some stripe,” and Schelling may be seen as the quintessential Romantic, contextualising rationality and privileging the concept of “spirit,” and as Mathews notes:

Romantic thought had had partial success in resolving Cartesian dualism at a metaphysical level, by putting mind back into matter, [but] it preserved such dualism at the epistemological level, by simply rejecting reason. Had it sought rather to restore feeling, intuition, instinct, and so on to reason, it might have arrived at a nondualistic form of knowing which would have been guided by the heart and grounded in the findings of direct experience but refined through critical reflection. 858

Not rejecting reason, but restoring a multifaceted form of knowing: This is also the position taken by Peirce who, according to Hookway “insisted that instinct and sentiment

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858 Mathews, For Love of Matter: A Contemporary Panpsychism, p.174
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were required for rational self-control rather than being in conflict with it.\textsuperscript{859} Peirce himself said that “reasoning and the science of reasoning strenuously proclaim the subordination of reasoning to sentiment” (CP 1.673). And Peirce is adamant that Thirdness is not to be put below Firstness and Secondness, but intuition is difficult to define as an aspect of rationality, carrying with it aspects of Feeling as Firstness. However, Kauffman asks:

> Is intuition merely an almost precognitive rapid rationality? Or is it something else, a spanning of the unknowable by metaphoric images or something else? I do not know the real answers to these questions. But they evoke at least part of what we do not yet know about ourselves and how we live our integrated humanity every day.\textsuperscript{860}

As I have discussed previously, Peirce’s view of aesthetics is suffused with the idea of action rather than contemplation. This attraction to a certain conduct becomes an ethical belief through the formation of habit, as Peirce writes:

\[\text{[The actor’s] self-criticism, followed by a more or less conscious resolution that in its turn excites a determination of his habit, will, with the aid of the sequel, modify a future action; but it will not generally be a moving cause to action. [And] the theory of the deliberate formation of such habits of feeling is what ought to be meant by esthetics (CP 1.574).} \]

But how can Peirce’s Thirdness, or his conception of Rationality as Logic, and as Law and Order, be understood as an aspect of the foundation of an ecological civilisation? Peirce does not associate an increase in reason and knowledge with a modern view of “progress” through rationality. As he says,

\[\text{…the essence of Reason is such that its being never can have been completely perfected. […] It requires…all the coloring of all qualities of feeling, including pleasure in its proper place among the rest. The development of Reason consists, you will observe, in embodiment, that is, in manifestation. […] Under this conception, the ideal of conduct will be to} \]

\textsuperscript{860} Kauffman, Reinventing the Sacred: A New View of Science, Reason and Religion, p.235
execute our little function in the operation of the creation by giving a hand toward rendering the world more reasonable whenever, as the slang is, it is ‘up to us’ to do so (CP 1.615).

Gare refers to Schelling’s work in natural philosophy which includes the notion of dialectic rationality. With regard to a non-mechanistic conception of nature, Gare notes that “[a]nalysis of these dynamic, holistic processes required a new kind of thinking.”861 Citing Edward A Beach on the development of dialectical rationality by Schelling, and also Fichte, and Hegel, he notes that in this way of thinking, “subjectivity and objectivity, of both mind and the encompassing world of nature, are mutually implicating aspects of a single, comprehensive system.” From this viewpoint, the application of reason, when it is tempered by feeling, provides benefits at every point where it is applied.

Gare suggests that “Peirce’s triadic logic, influenced by Schelling (involving inescapably abduction, deduction and induction), is really a form of dialectics.”862 And Buchanan refers to Merleau-Ponty’s claim that the relation between the behaviour of an animal and its environment — and this would have to include human animals — is

…and a truly dialectical relation [for] just as much as behavior reveals the being of the animal as found in the world, the world is equally uncovered in the behavior of the animal [and the] world, inasmuch as it harbors living beings, ceases to be a material plenum consisting of juxtaposed parts; it opens up at the place where behavior appears.863

And we can certainly recognise that “the world [has been] uncovered in the behavior of the [human] animal,” as our understanding of the world has been reflected in our exploitative behaviour towards it. Daly and Cobb observe in a similar dialectical observation:

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861 Gare, “From Kant to Schelling and Process Metaphysics: On the Way to Ecological Civilization”, p.42
862 Ibid., pp.65, n93
863 Buchanan, Onto-ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze, p.134
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Hegel analyzed the master-slave relation to show how profoundly and adversely the master is affected by it. [...] Domination at a deep level disempowers the dominator as well as the one dominated.\textsuperscript{864}

A new form of power is needed and Daly and Cobb expound on the difference between what they refer to as receptive power and active power, with receptive power being “the power to incorporate into oneself the feelings and thought of others.” They suggest that “[s]uch incorporation is an enlargement of one’s very selfhood. One’s ability to understand, to feel, and to think are all increased. In short, one becomes more powerful through the exercise of receptive power. At the same time receptive power also empowers others” and throughout this, they suggest, “community grows.”\textsuperscript{865}

Gare articulates Hegel’s conception of three dialectical processes by which people become self-determining agents, the dialectic of labour, the dialectic of recognition and the dialectic of representation. Gare notes that ecology has largely focussed on the dialectic of labour and related cultural aspects, but he suggests that “it is the dialectic of recognition that is more important for integrating communities.” This is because the establishment of identity and associated social organisation and roles requires that we are able to see ourselves “from the perspective of others.” And because this is a dialectical process it requires reciprocal recognition. This, therefore, “generates the quest for justice, that is, to give all people their due.”\textsuperscript{866} And “all people” may now be able to include all inhabitants of the biosphere.

I have referred earlier to Peirce’s description of the “agapastic” development of reasoning where new ideas are taken up due a pre-conscious attraction for the idea based

\textsuperscript{864} Daly and Cobb, \textit{For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future}, p.184
\textsuperscript{865} Ibid., p.185
\textsuperscript{866} Gare, “Human Ecology and Public Policy: Overcoming the Hegemony of Economics", p.138
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on some form of empathy. This attraction may be individually based but may also be based on a community benefit, with the idea originating in the collective and being taken up by the individual, or originating with the individual, but taken up for the benefit of the community. In each case, the attractiveness of the idea is based on the empathic connection between the community and the individual. This agapastic rationality, or literally a rationality based on love, manifests the qualities of Thirdness, that is a mediation between chance and unreasonable force (CP 6.302). This connection incorporates the dialectic of recognition mentioned above which has been described by Axel Honneth as the capacity of people to recognise and appreciate others as other subjects and, through others, to recognise and appreciate themselves as a free social agent sharing a common world.

Through this dialectic humans form identities, and develop a sense of justice and a sense of themselves as individuals with something to contribute to the world. But if we recognise others — and, I am arguing, this needs to include the whole “ecology of selves” — then we need to recognise the freedom and significance of others, including non-human others. However, in line with Peirce’s conception of agapistic development, I argue that this needs to be more than a recognition, more than an acknowledgement, and more than an accounting of their freedom and significance. It needs to be a feeling of empathy for those who are our fellow citizens in an ecological civilisation, it needs to be a relationship of love.

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867 Potter, Charles S. Peirce on Norms & Ideals, p.180
CONCLUSION

Drastic change is needed to repair the damage and avoid further catastrophe caused by the dualistic conceptions of the natural world which separate us from nature and bring a host of harmful consequences. This change needs to set us on the path to an ecological civilisation, to enable us as individuals, as communities, and as a society to recognise the earth as a home that we share with myriad other individuals and communities, human and non-human. And this change must enable us to cultivate the qualities necessary for us to live as ecological citizens.

As I have argued, the root of the problem with our relationship with the rest of nature is the internal model which shapes our perception of ourselves as humans and of the global ecosystem that is our home. This dualistic-mechanistic-reductionist view of nature that has been prominent since Descartes and his contemporaries has left us feeling disconnected from the rest of the natural world, and has led to an ethic of exploitation that shapes our rationality. This distorted rationality sets the objectives, structure and functions of our political, economic and educational systems and institutions. There is no doubt as to the complexity and difficulty of the resolution of this greatest of all wicked problems. But through the metaphysics of C. S. Peirce I have attempted to propose a cohesive, comprehensive and well founded solution.

Peirce’s metaphysics is based on a system of three fundamental Categories of Being, applied through a triadic semiotic method. It supports a synechistic understanding of the natural world that totally rejects any dualistic divisions, such as those between humanity and nature, mind and body, experience and empirical measurement. As such,
Peirce’s metaphysics can enable us to address the epistemological crisis, rooted in dualism, that is behind the currently pervasive neoliberal ideology, an ideology that has become a seemingly unstoppable force, ruining the earth and systematising a brutally inequitable society. Thus, this epistemological crisis is also a crisis of relationships; relationships between fellow humans as well as between humanity and the rest of the world.

The Category of Firstness, as defined by Peirce, based on his interpretation of sensual and cognitive phenomena, demonstrates how all ethical and rational conceptions of nature are founded on experience, manifested as undifferentiated feeling based on an aesthetic response. Recognising the unlimited potential of Firstness, we can reunite experience of the natural world with the knowledge of nature gained by empirically based science. This reunification provides us with the basis for the resolution of our epistemological crisis, and points to a method of scientific enquiry that can start to repair the damage caused by the degenerate and incomplete understanding of rationality that has been accepted since Descartes’ time.

Once we renew our appreciation of the value of experience and feeling, we can begin to repair our relationship with nature, moving from an association of exploitation and domination to one of empathy and respect. Through recognising the universal value of the aesthetic, enabled by and enriching what Peirce describes as the formation of habits which form our dominant view of the world, we can develop a new appreciation of the ethical, as discerned through our experience of wholeness in nature. Engaging with our emotions and imagination will help us to translate feelings into new habits that reflect our reconnection with the rest of nature, and shape our attitudes and actions towards one another.
Peircian Secondness, as manifested in ethics, provides us with an understanding of value that is based on our experience of the natural world. It enables us to develop an ethical system that will place value throughout nature; not based solely on what is good for us as humans, and certainly not based on the exploitation of the natural world in a way that reflects the insanity of our currently dominant ideology. Ethical decisions are based on the habits that are formed through our experience of nature as a responsive and cohesive whole, and a felt appreciation of our role as citizens of the planet along with a host of other cognising and agentic beings. Our empathic connection with these other “selves” is increased by our understanding of the surrounding worlds (Umwelten) that are experienced by these living beings, just as we experience, in our own way, our own Umwelten. This connection is further strengthened by our recognition of semiosis as a common means of communication, and as an enabler of creativity and agency throughout the natural world.

Our degenerate and distorted understanding of rationality is able to be repaired by our appreciation of Peirce’s Thirdness as reason, logic and law. A rationality founded in aesthetics and ethics overturns the use of reason for exploitation and oppression, as this holistic rationality is vitally creative and deeply empathetic. Peircian semiotics can help us to define a new way of studying the natural world that incorporates empathy, and legitimises a persuasive and communicative rhetorical element to epistemology. A consideration of the many aspects of human ecology, combined with semiosis, will form a fundamental aspect of this approach to scientific enquiry, breaking down the dualistic silos that have crippled education and research.
Political and economic systems and institutions that are grounded in this rationality will be supportive of communities of communities, including the non-human communities with which we share the global ecosystem, and will help to build a truly social society from the currently instrumental and rationalised system society. This holistic rationality will enable us to redefine notions of power and control, with complete control of the natural world and other humans no longer the goal. Instead, the quest for power supports the ability to understand the natural world and our place within it. Legal systems will be able to support the global ecosystem in a way that assigns an appropriate value to all aspects of the natural world, in recognition of the inherent cohesiveness of nature.

These changes can come about, not by proscriptive means, imposed by a hierarchy of interests, instantiated in structures of domination, but by the communication of these ideas in ways that engage the emotions through aesthetic response. A polyphonic narrative, which includes the voices of all of the inhabitants of the biosphere, can be crafted to stir emotions, communicate information, and help us to appreciate the value of our fellow citizens, human and non-human. Utopian visions can be developed and shared, stirring a sense of belonging and feelings of appreciation of the natural world. These feelings help with the development of habits of response, and shape our conceptions of value into a new ethics, moving us to reason based in love and appreciation of all of nature. The transformative actions to move us towards an ecological civilisation will follow naturally from the transformation of our feelings. Thus, as we gradually move from dualism to unity, from exploitation to empathy, and from brutality to humanity, we feel our way to an ecological civilisation.
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In line with the conventions for referencing the works of C. S. Peirce, in-text citations are given as follows:

CP x.y  Collected Papers of Charles Sanders Peirce

Volume x, Paragraph y


EP x.y  The Essential Peirce, Selected Philosophical Writings

Volume x, Paragraph y


HP x:y  Historical Perspectives on Peirce’s Logic of Science: A History of Science

Volume x, Page y


NEM x:y  The New Elements of Mathematics

Volume x, Page y

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**PWP x** Philosophical Writing of Peirce

Page x


**RLT x** Reasoning and the Logic of Things

Page x


**W x:y** Writings of Charles S. Peirce: A Chronological Edition

Volume x, Page y


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