FROM 'SUSTAINABLE DEVELOPMENT' TO 'ECOLOGICAL CIVILIZATION': WINNING THE WAR FOR SURVIVAL

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'Let there be no illusions. Taking effective action to halt massive injury to the earth's environment will require a mobilization of political will, international cooperation and sacrifice unknown except in wartime. Yet humanity is in a war right now, and it is not too draconian to call it a war for survival. It is a war in which all nations must be allies.'

Thomas A. Sancton, *Time Magazine*, 1989

ABSTRACT: The central place accorded the notion of 'sustainable development' among those attempting to overcome ecological problems could be one of the main reasons for their failure. It frames debates in a way that entrenches current priorities and marginalizes environmental issues. 'Ecological civilization' is proposed and defended as an alternative. 'Ecological civilization' has behind it a significant proportion of the leadership of China who would be empowered if this notion were taken up in the West. It carries with it the potential to fundamentally rethink the basic goals of life and to provide an alternative image of the future. It could both inspire people and provide the cultural foundations for the cultural, social and economic transformations necessary to create a new world order, a world order in which humans augment rather than undermine the ecosystems of which they are part. This paper explicates these implications.

KEYWORDS: Sustainable development; Framing; Ecological civilization; Transculturalism; Radical Enlightenment; Process philosophy

INTRODUCTION

The discourse surrounding efforts to face up to ecological destruction and to avoid a global ecological catastrophe has been dominated by the notion of sustainable development. Of course we want development, but we want this development to be sustainable. What could be more sensible? However, it should be clear to anyone who monitors global ecological destruction and the efforts to avoid it, that these efforts are failing dismally (Kovel, 2007, Ch.1). The struggle for survival is being lost. Could it be because our discourse has been constrained or even crippled by the notion of sustainable development? This is what I will suggest. 'Sustainable development' as a slogan functions to blind people to the gravity of the situation we face and the fundamental transformations in culture, institutions and social, economic and political organization that will be required to create a civilization that augments rather than undermines the life of the ecosystems of which we are part. 'Sustainable development' frames all debates over the environment in such a way that ecological issues are bound to be treated as of secondary importance to corporate profitability and marginalized (Lakoff, 1996; Lakoff, 2004). To inspire humanity to confront and overcome this threat to the future of life, to orient people to understand this crisis in all its complexity, to challenge the forces of destruction and to create a new social order, to reframe debates and then to provide the cultural foundations for this new order, requires a new vision of the future. This vision should be utopian in the sense that it does not yet exist, but reveals the contingency of current social order and inspires people to change it. As Paul Ricoeur specified, it is a dream that wants to be realized (Ricoeur, 1986, xxi). 'Ecological civilization', I will argue, is such a dream, a dream that wants to be realized. It has the capacity to support the conceptual rethinking required to understand the present, to identify its problems and its potential, and to orient people to create the future. Formulated through an ecological process metaphysics, it has the potential to provide the cultural foundations for a new global civilization (Gare, 2017a).

SUSTAINABLE DEVELOPMENT

What is wrong with 'sustainable development'? As Michael Redclift observed thirty years ago in his study of this concept, *Sustainable Development: Exploring the Contradictions*, 'sustainable development' combines two terms, each of which is problematic, and which are in tension with each other, at least as currently understood (Redclift, 1987). 'Sustainable' implies a possibility of 'holding out', at least for the time being, until relief is available. It could mean that we should not give up hope yet, and perhaps offer support for the sustainable situation. More optimistically, it implies the possibility of holding out indefinitely, although one might expect this to be based on considerable hardship. To say that one's situation in life is sustainable is to invite pity. It is not a term

we associated with much hope, at least for that which is sustainable, although it could be the condition for something else. If I have an illness, for instance, my condition might be sustainable until I can finish what I have been working on. Development, could be applied to a number of situations, and generally implies an improvement of whatever it is that is developing, although not always. I could develop my understanding of someone; however in the process of doing this I might develop an intense dislike of this person. Generally, development is assumed to be a good thing, even if it has negative side-effects, but there are exceptions. An obvious case of this is when we talk of the development of a tumour or cancer.

Combined as 'sustainable development', what is referred to is relatively unambiguous, at least on the surface. It was famously defined by the Commission for the Future in *Our Common Future: The World Commission on Environment and Development* as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (p.43). Development refers to the 'economy' that is assumed to be better the more developed it is. Countries are divided according to whether their economies are undeveloped, developing or developed, and it is assumed that it is better to be developed. But development does not stop here. It is assumed that developed economies should keep on developing. This is in fact the dominant story of humanity, although this has not always been the case. As Richard Norgaard pointed out:

> Historically, there were many cultures and hence many life stories. The stories were always evolving, cross-breeding with other life stories, or dying out with the people they sometimes led astray. Now we have one dominant story – the development story of economic growth without limits, the story of unending happiness from the possession of more and more things (Norgaard, 2009, 1).

In this context, what is supposed to be sustainable? Is it the economy? But this is what is developing, growing endlessly it seems, so long as recessions, or worse depressions, can be avoided. It is not so much the economy as such, but the conditions for it that we are really thinking about when we think of sustainability. While these conditions can be the people exploited by the economy, more often it is the ecological conditions. That is, built into the notion of sustainable development is a bifurcation where what really matters is the development of the economy, and the ecosystems of which humans are part are considered in terms of whether they are sustainable under the stress of the developing economy. Generally, this is how specific ecosystems are evaluated. The cod fishing industry was recognized to be dependent on the oceanic ecosystems in which cod grew and reproduced, and the concern of scientists was to work out what would be a sustainable yield, the yield that did not so damage the ecosystem that the industry would continue to flourish. This was the 'yield' that was

supposedly sustainable. As in a great many other ecosystems which scientists have sought to calculate what exploitation would be sustainable, they miscalculated and the oceanic ecosystem surrounding Newfoundland collapsed, along with the cod fish and the industry based upon their exploitation. With a globalized economy we are now viewing the global ecosystem in the same way. As Norgaard continued, the story of economic growth 'is destroying nature, driving greater injustices each day, and threatening the future of humanity' (p.1). The book that Norgaard was introducing, *Beyond Developmentality* by Debal Deb, showed in great detail how the quest for development in India, defined in terms of growth of GNP, is undermining Indian agriculture and destroying the diversity of nature.

This does not mean that all those who have invoked the notion of sustainable development are deeply malicious. The originators of the notion had the purest of motives. This concept was central to the Brundtland Inquiry and its report, *Our Common Future*, concerned with how to ensure a better future for the whole of humanity. And it is possible to redefine sustainability so it focuses on the health of ecosystems rather than working out how intensively nature can be exploited in the service of increasing GNP. This is what Allen, Tainter and Hoekstra called for in *Supply-Side Sustainability* (2003). However, it was for good reasons that the ruling elites embraced 'sustainable development' to defend the status quo. It was a notion that they could embrace and promulgate without this challenging current power arrangements and the social forms on which these were based, providing the impression of acting effectively while continuing with business as usual. As Leslie Skair pointed out, the new global ruling class saw the greatest threat to their hegemony coming from the environmental movement and their own inability to deal with environmental problems. Operating through the *International Chamber of Commerce* through the 1970s and 80s, they established a 'green business network' to define policy on the environment, forming the *Global Environmental Management Initiative* in 1990 – promoting self-assessement and voluntary codes where-ever possible. As Sklair put it, 'Big business mobilized a sustainable development historical bloc against what it saw as a threatening counterculture organized around the powerful idea of the singular ecological crisis, the "deep green" of the ecological movement' (Sklair, 2001, 206). This new global ruling class, dubbed the corporatocracy by John Perkins (Perkins, 2006, xv), geographically mobile and immensely wealthy, along with the people they have co-opted to serve their interests, is ultimately responsible for maintaining the trajectory of modernity towards global ecological destruction. They are not only not challenged by people espousing the notion of sustainable development, but have actively promoted it to enframe debates on the environment to neutralize any challenges.

Just how important framing debates is was revealed by George Lakoff in his study of the major reorientation in politics that took place in USA with the rise of neoconservatives (Lakoff, 1996; Lakoff, 2004). He showed how neoconservative strategists deliberately set out to forge a coherent political ideology based on the idea of moral order, disciplining each other to ensure that all discourses incorporated the correct vocabulary. Underpinning this moral order was the metaphor of the patriarchal family. This metaphor implied getting the State of their back, just as grown children want their parents off their back, and holding individuals entirely responsible for their successes or failures in life. It involved dissolving the welfare State, privatising public assets and eliminating all constraints on the operation of the market and its most powerful agents. It also involved not allowing others, such as the United Nations, telling Americans what they should do. Every social, political and economic issue was addressed through this language, framing debates so that opponents found themselves accepting these frames, offering alternatives as minor amendments to the goals promoted by these neoconservatives. In this moral order, humans have dominion over nature, and nature should be made to serve human purposes where-ever possible.

This US neoconservativism has been in accord with and part of the broader neoliberal movement according to which the self-interest of all is best served by individuals promoting their own self-interests, and public institutions are denigrated as inefficient and incompetent. Nothing should obstruct business activity, the foundation of society, driven by self-interest, and no image of the future not defined in terms of increasing production of exchangeable commodities, should be taken seriously. As Philip Mirowski and Dieter Plehwe showed in their anthology, *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective* (2009), the Mont Pèlerin Society founded in 1947 set out to frame all political and economic debates on a global scale, replacing Keynesian economics and its social democratic agenda by imposing a globalized market.

The Keynesian agenda not only involved maintaining full employment through redistribution of income, subordination of the financial sector to the productive sector of the economy and government involvement in the economy through fiscal policies implemented through government owned enterprises, along with the minimization of trade to ensure that governments could control their economies, but as Hyman Minksy pointed out, a steady reduction of the significance accorded to the market economy as people were provided with the means to pursue more noble ends (Minsky, 2008).

All this was swept aside by neoliberalism. The success of neoliberals from the end of the 1970s in transforming not only right-wing but, more importantly, former left-wing political parties which accepted the neoliberal agenda as the only realistic basis

for policy formation. Maintaining the conditions for nations to control their own economies and protect their communities from the ravages of the global market were dismissed by them as unrealistic, despite the success of these policies in the past (Kagarlitsky, 1999). This was a striking illustration of the efficacy of framing as analysed by Lakoff, but on a much broader scale. As shown by Takis Fotopolous in *The New World Order in Action* (2016), the new globalized political class who control these left-wing political parties have shown themselves incapable of thinking outside the neoliberal frame, even when faced with national crises as in Greece and a global financial crisis. As Mirowski showed, it was only when neoliberals were able to frame policies to promote sustainable development through the imposition of the market, now understood as the Ultimate Cyborg - smarter than any human being, that environmental problems were acknowledged (Mirowski, 2013, 334ff.). Where the market is failing to identify and deal with environmental problems and their underlying causes, which are almost always related to the expansion of markets and to economic growth as defined through market exchanges, the problems are not acknowledged. 'Sustainable development' is clearly now a central component of the neoliberal frame and is serving to block awareness of the severity of the problems we face, and their causes.

ECOLOGICAL CIVILIZATION AND TRANSCULTURALISM

So, what alternatives are there? Apart from 'ecological civilization' there are a number of alternatives to 'sustainable development' to focus on the crisis confronting us, working out how to overcome this crisis and offering inspiring visions of the future to mobilize people into action: eco-socialism, earth democracy, inclusive democracy and the ecozoic age, being the most prominent. These are not opposed to each other. It could be argued that to be civilized at present requires people to be not only environmentalists committed to strong democracy, requiring some form of socialism, but also requires appreciation of the intrinsic value of all life. All these 'alternatives' are promoting civilization in this sense. Why then should environmentalists align themselves with the notion of 'ecological civilization'?

There are practical reasons, notably that the Chinese government has officially committed itself to the notion of ecological civilization. Why should this matter? China is clearly emerging as a superpower and increasingly will challenge existing power structures in the world. It is almost certain that its rise to power will be resented by those regions in the world that presently have the most power. Its future is far more threatened by ecological destruction, including climate destabilization, than USA, Europe or Russia, and so has far more reason for promoting a global solution to the

ecological crisis than other major powers. The Chinese government is clearly aware of this. China is manufacturing and installing solar electric and wind energy systems at an astounding rate. It is responsible for 40% of global renewable energy growth according to the International Energy Agency (IEA). Last year, global solar electric (PV) capacity grew by 50%, over 74 gigawatts, with China responsible for almost half of this (Morrison, 2017, Ch.13&14)). But this is clearly not enough. China is responsible for the 30% of the world CO_2 emissions, and more worrying, financing the building of coal-fired power plants in other countries. The way China chooses to deal with this situation is not pre-determined. If the way they act leads to another arms race with USA, the outcome could be disastrous for the whole of humanity, with China the biggest loser. Those in China most committed to promoting 'ecological civilization' are engaged in a very complex quest. The notion of 'ecological culture' was coined in the former Soviet Union, probably by Ivan Frolov (Xu. 2009, 158-161). It was taken up, translated as 'ecological civilization' and developed in China, and proselytized by Pan Yue, the Vice-Minister for the Ministry of Environmental Protection (Pan & Zu, 2006; Yu, 2008, 4; Huan, 2008). In November, 2007, the government, under the leadership of Hu Jintao and Wen Jiabao, embraced the quest for ecological civilization as government policy, and this was written into the constitution in 2012 (Wang et.al. 2014, 37-59). Utilizing these terms is an appropriation of concepts developed in Western Europe. However, this notion also facilitates the revival of traditional Chinese ways of thinking, and their integration with Western ideas. In April 2014, the United Nations Alliance of Civilizations and the International Ecological Safety Collaborative Organization founded a sub-committee on ecological civilization.

Central to this complex quest is the notion of civilization. There are many connotations to the term 'civilization'. Two that are important in this context are, firstly that, like the term 'culture', this term is associated with appreciation of difference and the value of such differences, as opposed to the idea that one group of people alone can adjudicate on what is the right way to understand the world and on how societies should be organized. Secondly, and in tension to some extent with this, is that civilization is associated with the idea of progress as being more civilized, and that such progress involves moving towards and creating global civilization. However, this is a fruitful tension, and illustrates another ideal formulated in Russia and Eastern Europe, that of transculturalism.

Transculturalism was developed in opposition to the relativism of multi-culturalism. It is a doctrine that holds that, as humans free themselves from biological imperatives through culture, they also free themselves from the narrowness and parochialism of their particular cultures by embracing transculturalism. As Mikhail

Epstein argued, 'the fundamental principle of transcultural thinking and existence' is the '[l]iberation from culture through culture itself', generating a 'transcultural world which lies not apart from, but within all existing cultures' (Epstein, 1995, 298f.). This does not mean dissolving existing cultures into a homogeneous global culture. What is required is diverse, interacting cultures learning from and challenging each other. This is the condition for creativity in the quest for truth, justice and liberty, for as the Russian philosopher Vladimir Bibler observed, 'Culture can live and develop, as culture, only on the borders of cultures' (Epstein, 1995, 291).

The critical perspective provided by such transculturalism serves to enable members of particular cultures to re-evaluate the different traditions within their own cultures. To begin with, it supports those traditions commensurate with transculturalism, that is, those traditions that foster appreciation of different perspectives, dialogue and cultural creativity. In China, after a period in which through a form of Marxism celebrating technological control of nature, Chinese not merely assimilated major aspects of the culture of European civilization but rejected their own traditions. They are now returning to Confucian ideas (Bell, 2008). However, proponents of ecological civilization are encouraging also a revival of the more radical Daoist traditions of thought characterized by its appreciation of nature and its autonomous dynamics, its egalitarianism and its aversion to the quest to dominate and to conflict. The revival of Daoic thought generally is important not only for China but for the world, since these are the philosophies that developed in response to the period of cultural disintegration that led to the period of the warring states, and following the short-lived brutal reign of the victor of these wars, the Qin dynasty (221-206 BCE). These ideas served as the foundation for a far more humane social order (Gare, 2013; Gare, 2017b).

Chinese proponents of ecological civilization also embrace different aspects of European civilization. They are aligned with humanistic forms of Marxism (including eco-Marxism) and so are concerned to overcome exploitative relationships, subordinating markets to democratically organized communities and to creating a society in which people are free to develop their full potential to contribute to the common good of their communities, including the global ecosystem, and thereby gain fulfillment in their work (Gare, 2012). In doing so, they highlight and align themselves with the whole tradition of European thought that upheld these goals. Essentially, these are the ideals of the Radical Enlightenment (Gare, 2008). By supporting such ideas in China, proponents of ecological civilization are helping to revive these ideals throughout the world.

To the extent that radical environmentalists prevail in the China, then China's

rivalry with other world powers will avoid a struggle based on direct conflict and rivalry based on military power and threats based on this. Instead, it will take the form of intellectual moral leadership, providing support for people throughout the world struggling for autonomy, gaining allegiances to challenge efforts by current world powers to subjugate everyone to promote their own particular interests, usually by undermining democratic control of the institutions required by communities to control the operations of the market and imposing markets on all facets of life. This was the approach of the highly successful Beijing Consenus promoted under the leadership of Hu Jintao and Wen Jiabao in opposition to the Washington Consensus, which involved imposing free markets, free trade and austerity measures on developing countries, undermining their societies and economies and enslaving these nations to the global corporatocracy. The triumph of the proponents of ecological civilization would lead to China taking a leading role in the struggle to create a global civilization, reorienting humanity to overcome the threat to global ecological destruction. Supporting the idea of ecological civilization in the West would strengthen the influence within China of this movement. The outcome of its success would be a rising global power becoming a major force for addressing ecological problems throughout the world and moving the whole of humanity to a new kind of civilization, a civilization that would combine tolerance for diversity while upholding the quest for common understanding on a global scale as the condition for defending this diversity.

ECOLOGICAL CIVILIZATION AND THE RADICAL ENLIGHTENMENT

The tensions generated within China associated with its efforts to come to terms with European civilization when examined from the West, appreciating this quest as itself a development of transculturalism, serve to highlight the confusions and conflicting trends set in motion by European civilization. It should now be clear that the simple dichotomy in politics between 'left' and 'right', with every political philosophy situated somewhere between two extremes, no longer illuminates what is going on in the world, if it ever did. This became apparent to Cornelius Castordiadis, a former Marxist. Castoriadis became disillusioned not only with the Soviet Union, but Marxism as such. He concluded that except in his early works, Marx shared too many assumptions with the views he critiqued, and it was partly for this reason that the Soviet Union became nothing more than a bureaucratic form of capitalism. Presciently, he predicted that with the collapse of the Soviet Union, overtly capitalist countries would become more oppressive, with greater polarization of wealth and power, driving humanity to greater ecological destruction. So-called neoliberalism is really bureaucratic capitalism with corporate and government managers acting in the interests of transnational corporations taking the place of the bourgeoisie as the oppressive ruling class. To

explain what had happened, he pointed out that modernity has been characterized by two fundamentally different imaginaries: autonomy and technological mastery over the world. These are in conflict, and Castoriadis has chartered how the imaginary of total technological control over the world has undermined the quest for autonomy (Castoriadis, 1991 & 2007). The perspicacity of his analyses based on recognizing this division has attracted increasing attention, and this has engendered more work attempting to comprehend our present predicament, and how we can escape from it.

Castoriadis developed his notion of autonomy by studying the birth and development of democracy in Ancient Greece. This has not been very useful for thinking about what direction we should take in the present. However, his division between the quest for autonomy and the quest for technological mastery of the world corresponds to the division identified by Margaret Jacob and, more recently, Jonathan Israel, between the 'Radical' and the 'Moderate' enlightenments (Jacob, 2003; Israel, 2002). As Jacob characterized this division, the Radical Enlightenment embraced Giordano Bruno's divinization of nature and conception of humans as part of nature while continuing the Renaissance quest for an egalitarian form of republicanism, which was really a defense of liberty and strong democracy. The moderate Enlightenment was based on the scientific revolution of the Seventeenth Century led by Mersenne, Gassendi, Descartes, Hobbes, Newton and Locke, rejected Bruno's Nature Enthusiasm and reformulated the notion of freedom to reject the Renaissance ideal of liberty (Skinner, 1998). Upholding a view of nature as nothing but matter to be controlled for human purposes, the scientific revolution also replaced the ideal of liberty with protection of life and property, along with some tolerance for people with different religious views. This revolution was characterized by Stephen Toulmin as the counter-Renaissance (Toulmin, 1994, 24). Where the focus of the Renaissance was on the development of *humanitas* and the education and institutions required for people to govern themselves, the moderate Enlightenment fostered possessive individualism and acquisitiveness (Macpherson, 1962). The Eighteenth Century proponents of the moderate Enlightenment continued to oppose Renaissance ideas.

The Radical Enlightenment evolved in reaction to the moderate Enlightenment, firstly as an underground movement, defending and developing the Renaissance heritage. It has been a significant force ever since. Often demonized as Spinozism, it was promoted by Rousseau and Diderot before flowering in Germany with J.G. Herder, J.G. Fichte, Friedrich Schelling and the early Romantics (Gare, 2008). Philosophers such as Kant and Hegel were ambivalent, but the liberal and young Hegelians were fully aligned with the Radical Enlightenment. It has been a force ever since, evident in the early works of Marx and the later works of J.S. Mill, in the British and American Idealists of the second part of the Nineteenth Century, in the

pragmatists, in humanist and eco-Marxists and in process philosophy. It is impossible to fully understand Whitehead and process metaphysics except in relation to the Radical Enlightenment, once the history of this has been revealed (Gare, 2008). Both the notions of 'culture' and 'civilization' are products of the Radical Enlightenment, highlighting the central concern of proponents of the Radical Enlightenment to develop people, to cultivate and civilize them. However, it has been characteristic of the Radical Enlightenment to accord intrinsic value to nature and inspired challenges to Newtonian cosmology, to develop a dynamic view of nature, an anti-reductionist biology and humanistic forms of the human sciences.

While the notion of civilization has not been central to political philosophy, it is in fact a notion that encompasses within it all the ideals of the Radical Enlightenment. The term derives from the Latin civitas, the social body of the *cives*, or citizens, united by law that binds them together, giving them responsibilities on the one hand and rights of citizenship on the other. The law has a life of its own, creating a *res publica* or 'public entity' (synonymous with civitas). As the Roman Empire expanded the term was used for those kingdoms that were allowed some measure of self-governance. So, to be civilized meant to be able to govern oneself, having been educated to do so, and thereby having acquired the virtues of *humanitas*, or humanity. Influenced by the Greeks, education has always been seen as central to civilization. 'Civilization' is a noun of process and implies an ongoing process of civilizing. Civilization came to be defined in opposition to barbarity and decadence (Gare, 2010b). Barbarity is the state of people who have not been civilized. Decadence is the corruption and decay of civilization, making people far worse than barbarians. Barbarians were often lauded for their virtues, although these virtues were limited and often accompanied by great brutality. Barbarians are defined as such by their lack the capacity to plan and organize for the long-term, to reflect on their lives and institutions, and to put themselves in the shoes of others outside their tribe. Decadent people lack all virtues, apart from their ability to use the language and institutions created by civilizations for their own ends. As Giambatista Vico characterized this ultimate of civil disease:

> … peoples, like so many beasts, have fallen into the custom of each man thinking only of his own private interests and have reached the extreme of delicacy, or better of pride, in which like wild animals they bristle and lash out at the slightest displeasure. Thus no matter how great the throng and press of their bodies, they live like wild beasts in a deep solitude of spirit and will, scarcely any two being able to agree since each follows his own pleasure and caprice (Vico, 1984, par.1106).

It is against this background that the efforts of Alfred North Whitehead's efforts to define civilization in *Adventures of Ideas* should be understood. While acknowledging the

value of measuring civilization against the standard of Ancient Greece and Rome at their height, Whitehead argued that it is necessary to redefine civilization to go beyond these standards. The essential qualities of civilization, he argued, are 'Truth, Beauty, Adventure, Art and Peace' (Whitehead, 1933, Part IV). While Whitehead illuminated the meaning of each of these terms, the place accorded to Beauty can be further developed in light of the work of the architectural and town planning theorist Christopher Alexander. Alexander argued that beauty is an objective, felt quality of the world associated with wholeness and life. He equated beauty and life, arguing that 'the beauty of a thing is not purely in how it looks. It has to do with how it is. Now how it "is" essentially involves a relationship between the various events that are going on there…. So it is ultimately the inner life which is the thing that matters' (Alexander, 1977, 56). What we regard as beautiful we also regard as more alive and conducive to life, whether we are considering a building, a city, a scene or a way of life.

To these qualities we might also add Liberty and Justice. Liberty, as the Renaissance civic humanists understood it, is the opposite of slavery where people are subject to the arbitrary decisions of others on whom they are dependent and who can harm them (Skinner, 2008, x). Liberty entails having the conditions, including economic security and education, to develop and deploy one's full potential to participate in society, to participate in questioning and reformulating the goals, beliefs, values and institutions of society and its organizations, and the right to assert oneself without fear of retribution. Justice is the proper recognition in thought and action of what beings are, what is their history, what have they been through, what is their contribution to community, what are their goals, and what is their potential, whether these beings be persons, communities, civilizations or non-human forms of life, including ecosystems. It is in the context of the struggle for Liberty and Justice that the quest for Truth, Beauty, Adventure, Art and Peace gain their full significance, and can be appreciated as defining the goals of the Radical Enlightenment. The quest for Liberty requires Adventure, Art and Peace, while Justice requires Truth and Beauty.

THE RADICAL ENLIGHTENMENT AND ECOLOGY

If the civilization of the future is to be an ecological civilization, this will be because its cosmology will be based on ecological thinking. Ecology is the study of biotic communities and the 'households' or 'homes' they create. It is the study of how these communities collectively transform their environments to augment the conditions of their existence. The notion of ecological civilization requires not only that ecology be taken very seriously, but that it replace current assumptions about the world and our place within it as the condition for the advance of civilization. It is for this reason that it

will be an ecological civilization. Why should the advance of civilization require this?

Getting back to the qualities that define civilization, justice implies that the way any being is understood is true. Since the way every being and situation is understood is colored by our basic metaphysical assumptions, what is most important for justice is that these metaphysical assumptions be valid. The global ecological crisis and the failure to deal with this is really a manifestation of the defective way of defining reality embodied and reproduced by the institutions of modernity that now dominate the world and guide people's actions, individually and collectively. Humanity now acts on the assumption of a false model of itself and its place in nature, and as James Coffman and Donald Mikulecky argued, as a consequence is effectively insane. This is a manifestation of the triumph of scientific materialism as this has been articulated, not only in the natural sciences but also in the human sciences, most importantly, economics. It has come to define our ultimate goal as the endless expansion of the production of commodities, and life as a struggle for survival in which progress requires the elimination of the less fit. It is only through accepting scientific materialism that people can accept with equanimity treating everything and everyone as instruments to be exploited as efficiently as possible to maximize profitability, or as rivals to be defeated and subjugated, killed or allowed to perish, and indifference to the destruction of species, ecosystems, races and civilizations. It underlies and legitimates the imposition of a global market on all facets of life so that, as the ecological economist, Kozo Mayumi argued, economic enterprises that are ecologically sustainable are not economically viable, while those economic enterprises that are economically viable are ecologically unsustainable (Mayumi, 2001, 125). It is through the commitment to truth that proponents of the Radical Enlightenment have challenged and sought to replace scientific materialism as the most defensible foundation for our cosmology, and our characterization of life and humanity. If process metaphysics is valid, then our institutions and actions that are wreaking such massive ecological destruction, are profoundly unjust.

This, essentially, is what Whitehead was arguing when he wrote of the consequences of scientific materialism as a disaster of the first magnitude, and of the implications of post-scientific materialist science:

> The watchwords of the nineteenth century have been, struggle for existence, competition, class warfare. The struggle for existence has been construed into the gospel of hate. The full conclusion to be drawn from a philosophy of evolution is fortunately of a more balanced character. Successful organisms modify their environment. Those organisms are successful which modify their environments so as to assist each other. This law is exemplified in nature on a vast scale. (Whitehead, 1932, 256).

This observation was enormously influential in the development of ecology in USA. It led to the study of symbiosis, and to new approaches in ecology (Worster, 1994, 320ff.). These led to the Gaia hypothesis of James Lovelock and Lynn Margulis, Margulis' argument that symbiosis is the core of evolution, that we are all symbionts, and James Lovelock's claim that nature has evolved by removing those organisms that foul their own nests.

Modernity, dominated by the moderate Enlightenment, has privileged physics as the ultimate science. This has been taken as the ideal model for all sciences, and determined their relative status. Physics was challenged by biology, with organisms, sometimes characterized as systems, being taken as the ultimate reference point for defining reality. However, physics had to be confronted on its own grounds to successfully defend this challenge. Whitehead focused on physics and its developments in developing his philosophy of organism. However, the defense of organism has not succeeded in overthrowing scientific materialism. The Newtonian model of science still dominates. Ecology was only at an early stage of development when Whitehead made his profound observations on evolution. Many ecologists subsequently attempted to improve its status by promoting reductionist explanations, undermining its challenge to mainstream science, and trivializing ecology (Dawkins, 1976). Ecology has now matured and recovered its original impetus. Robert Ulanowicz claims that ecology should be recognized as the reference point for defining all science. As he put it in his book *Ecology, The Ascendent Perspective*:

> Ecology occupies the propitious middle ground. … Indeed ecology may well provide a preferred theatre in which to search for principles that might offer very broad implications for science in general. If we loosen the grip of our prejudice in favor of mechanism as the general principle, we see in this thought the first inkling that ecology, the sick discipline, could in fact become the key to a radical leap in scientific thought. A new perspective on how things happen in the ecological world might conceivably break the conceptual logjams that currently hinder progress in understanding evolutionary phenomena, development biology, the rest of the life sciences, and, conceivably, even physics (Ulanowicz, 1997, 6).

The current stagnation of physics, associated with its inability to comprehend complexity and claims that organisms themselves are really only highly integrated ecosystems, provides strong justification for this claim. In a later work, *A Third Window,* Ulanowicz defended a 'process ecology' which can serve as the foundation for 'an ecological metaphysic' (Ulanowicz, 2009, esp. ch.6.). That is, the ultimate existents of the universe have to be seen as creative processes, or durational self-constraining patterns of activity, and configurations of such processes in dynamic interaction, rather than objects or things. The focus of science should be on processes and chance events,

rather than law, since as Ulanowicz put it: 'laws emerged out of inchoate processes eventually to become static, degenerate forms of the latter' (Ulanowicz, 2009, 164).

In arguing this, Ulanowicz is aligned with those inspired by Charles Sanders Peirce, including the ecosemioticians. Ecosemioticians, who argued that organisms themselves are highly integrated ecosystems, argue that ecosystems are made of semiotic bonds, and portray life on earth as a development of the global semiosphere. They provide further justification for Lovelock's Gaia hypothesis (Kotov and Kull, 2011). Biosemiotics and ecosemiotics have been defended through hierarchy theory, according to which emergence of new order with new kinds of beings (including humans), occurs through the interpolation of new enabling constraints (Salthe, 2005). Semiosis, from its most primitive forms to human culture, involves constraining activity, facilitating new forms of cooperative creativity involving new kinds of constraints. The growing appreciation of justice as the proper appreciation of co-participants in ecological communities, constraining how people live, can now be seen as an essential feature of evolution, culminating in the potential of humanity to appreciate the intrinsic significance of the current regime of the global ecosystem and to constrain their activities accordingly. It is this evolutionary progress through the advance of justice that evolution has generated greater beauty in the world, a world that is more alive and more conducive to life, and life has become more resilient.

That is, ecology provides the basis for defending and further developing a 'process' world-orientation, integrating work inspired by Whitehead, Peirce and other process metaphysicians, and for advancing post-reductionist science that supports, on naturalistic foundations, humanistic approaches to the human sciences, while providing the basis for defending, rethinking and advancing the humanities. This ecological perspective is being developed through human ecology, ecological economics and political ecology, serving as the framework within which all other human sciences and the humanities can be reformulated. This involves changing the way ethics, politics and technology are understood.

THE ETHICS, POLITICS AND TECHNOSCIENCE OF ECO-POIESIS

Ethics should not be seen simply as a discourse concerned with how to live and what to aim at, but also with what kinds of subjects we should be striving to become. This is really what all the humanities should be about, not just ethical philosophy, and because of this, the humanities should be seen to be more important than science. As Mikhail Epstein wrote:

> The crucial distinction between the humanities and the sciences is that in the
> humanities the subject and the object of study coincide; in the humanities,

humans are studied by humans and for humans. Therefore, to study the human being also means to create humanness itself; every act of the description of the human is, by the same token, an event of one's self construction. In a wholly practical sense, the humanities create the human, as human beings are transformed by the study of literature, art, languages, history and philosophy: the humanities humanize (Epstein, 2012, 7).

Humans create themselves by creating 'new images, signs and concepts of themselves … humans do not so much discover something in the world of objects as build their very subjectivity by way of self-description and self-projection' (Epstein, 2012, 8). It is for this reason that work in the humanities should always be evaluative and polemical. What would it mean for the humanities, and for ethics, to create humanness through ecology?

Essentially, to understand oneself through ecology is to understand oneself as a participant in communities of communities, where one's actions, one's practices, what one produces and the development of one's character are either augmenting or undermining these communities, and can be judged accordingly. Essentially, this supports an expanded version of Aldo Leopold's land ethic: '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' (Leopold, 1949, 224f.). It extends this from one community to a complex of communities of communities. Contributing to these communities is essentially home-making, or 'eco-poiesis' for any number of these communities (Gare, 2010a). It is necessary to evaluate oneself, one's actions and one's products in relation to human communities and organizations also, not only in terms of whether the health and life of these are being augmented, but whether the communities and organizations are developing in such a way that they augment the life of other communities, including the broader ecological communities of which one is part. The ultimate community that we have to consider is the current regime of the global ecosystem with all its component ecosystems and organisms with which humans have co-evolved over the last 100,000 years or so.

From this perspective it should be evident that some communities can be a threat to other communities. Cancerous tumours are communities of cells that are a threat to the health and life of the organism within which they are located. A feature of such tumours is their components are constrained to act and function in a way that augments the development of these tumours, which ultimately threatens their own existence. Human organizations can be, and have been characterized as cancerous tumours in the global ecosystem (Korton, 2000, 15). Those living within these who, inspired by different ideals, align themselves with life and the global ecosystem, are like healthy cells in a tumour. As healthy cells can bring about spontaneous remissions, so,

hopefully, can such inspired people. To do so requires engagement in politics.

If the transformation of the human science through ecological thinking is to bring about social transformations through politics, this should be thought of very differently from the approach of the positivist human sciences. It is not a matter of objectifying people and engaging in social engineering. It is a matter of transforming culture so that people themselves become collective agents in such transformation; that is, social science in the service of democracy. Richard Norgaard noted that there are three ways in which large numbers of people can coordinate their activities in complex societies, through bureaucracies, through markets and through democratic institutions (Norgaard, 1994, ch.11). It is unlikely that any of these three could be totally eliminated, but the way they relate to each other can be very different. Unconstrained markets dominated by transnational corporations, eliminating economic security and enslaving people to the managers of corporations under the ideology of neoliberalism, are really an alliance of markets and bureaucracies against democracy (Plehwe et al. 2006). Democracy in any meaningful sense has been almost completely undermined in most countries through the concentration of wealth, the development of mind control industries of advertising and public relations, and the subversion of and transformation of public institutions to serve the quest of corporations to maximize profits. Even a former US vice-president, Al Gore, has concluded that democracy in USA has been broken (Gore, 2007). It is this enslavement to market forces and managers of corporations which is driving ecological destruction and crippling opposition to it (Klein, 2014). The empowerment of government bureaucracies to control markets with very little democracy was demonstrated by the former communist countries to be just as environmentally destructive as unconstrained markets (Pryde, 1991). It is the more democratic countries, such as Switzerland and Denmark, which have been most ecologically responsible. Creating an ecological civilization will require the fostering of democracies organized at multiple levels which, to be genuine, will require as much decentralization as possible, and the development and maintenance of public institutions outside the market through which the public sphere and the life of culture can be fostered and democratic planning can be undertaken and implemented to control markets and bureaucracies (Vatn, 2005).

The struggle for liberty, central to politics, should be understood, despite arguments to the contrary, to include all three of its forms – freedom from slavery, freedom from constraint and freedom to pursue worthwhile goals, with the first and the third being the more important (Skinner 2002). The worst form of slavery is to be forced to live and act in a way that is destroying the conditions of one's existence, and that is the situation of most people at present through the imposition of the global

market and the rise of Taylorist managerialism, concentrating knowledge and decision-making in the hands of management while undermining the security of employment of those they manage (Rees and Rodley, 1995). The notion of liberty should encompass not only freedom from such slavery, but also freedom to live and act in a way that augments rather than undermines liberty and life. As the neo-Hegelian philosopher T.H. Green argued, 'When we speak of freedom we mean a positive power or capacity of doing or enjoying something worth doing or enjoying, and that, too, something that we do or enjoy in common with others.' True freedom, Green argued, consists in pursuing the common good which augments the freedom of all people. He continued:

> When we measure the progress of a society by its growth in freedom, we measure it by the increasing development and exercise on the whole of those powers of contributing to social good with which we believe the members of the society to be endowed; in short, by the greater power on the part of the citizens as a body to make the most and best of themselves (Green, 1986, 199).

Liberty in the modern world should be seen as first and foremost the struggle for such democratic control of markets, bureaucracies and managers, with the institutions of markets and bureaucracies transformed to augment rather than undermine democracy (Prugh, Constanza and Daly, 2000). The development of human ecology, along with an institutionalist form of ecological economics and political ecology, should be developed so as to make such democratic control possible, to enable people to understand the world and participate in decision-making. To facilitate such control will require as much as possible the localization of production, creating what Richard Norgaard characterized as a 'coevolving patchwork quilt of discursive communities' (1994, p.165) in place of technocratic governance, and the economic institutions, including local currencies, to make this possible (Hornborg, 2013, Ch.8).

We will still require of science technological knowledge to transform nature. However, this also should be reconceived. From enframing the world to reveal its predictability and to gain complete control over it, technology should be reconceived as the means to foster the health and development of ecosystems, including both individual organisms and human communities, so that in acting, members of these communities augment the health and life of these ecosystems. Health here can be equated with resilience in the face of perturbations (Gunderson, Allen and Holling, 2010). What this entails is most easily seen in relation to agriculture where human activity need not be destructive but can augment life. For instance, the most fertile regions of the Amazon rainforest where vegetation is healthiest are regions with *terra preta* soils have been produced by humans burying charcoal. Soils throughout the world could be made more fertile in this way, in the process withdrawing carbon from the

atmosphere and reducing the risk of a runaway greenhouse effect. In India, Vandana Shiva has led a movement to return to more traditional and self-reliant forms of agriculture that involve the cultivation of healthy ecosystems, with many species suitable to the conditions cultivated simultaneously without the need for fertilizers. At the same time she has exposed and attacked institutions supporting global markets and ecologically destructive agribusiness companies (Shiva, 2008). Wes Jackson is developing perennials with high seed yields that will strengthen ecosystems while massively reducing the inputs required to sustain life (Jackson, 2010). Medicine can be cognizant of the symbiotic relation between organisms and attempt to create ecosystems that are conducive to human health. Without the tyranny of the global market, manufacturing can be confined exclusively to producing goods that can be recycled, as William McDonough and Michael Braungart proposed in their book *Cradle to Cradle: Remaking the Way We Make Things*. Built-up environments, conceived of as participation in the morphogenesis of nature, can be designed to foster the social and cultural life and democratic organization of communities, augmenting their power to control markets and bureaucracies. This essentially is what Christopher Alexander argued for (Alexander, 2007/2008; Gare, 2007/2008). It is because European cities are closer to this form than US cities that Europeans are less ecologically destructive than Americans (Beatley, 2012).

CONCLUSION

Sustainable development as a notion tacitly conceives the economy as something separate from the rest of nature that needs to be managed to avoid too much damage to the environment so that nature can continue to be exploited. Ecological civilization as a notion takes this orientation to nature, as something separate from humans, as the fundamental problem underlying ecological destruction. It is a call for the cultural and social transformation to overcome this way of thinking, now embodied in and reproduced by our dominant institutions. This transformation involves a fundamental rethinking of ethics, politics and technoscience on the basis of process metaphysics, articulated through the science of ecology. It involves such a fundamental change in the way people think about these topics that it is necessary to invoke the resources provided by transculturalism. Chinese philosophy differs from European philosophy, which began as the quest to characterize the nature of Being, by privileging instead the quest to find 'the way', or 'Dao'. Since the Chinese language does not use articles, both 'a' way and 'the' way are implied by this quest (Gare, 2017b). While it is not necessary to abandon the achievement of European thought, the quest to create an ecological civilization should perhaps be characterized as this quest to find Dao. This is not simply an intellectual inquiry but an injunction to develop humanity to augment the

life of its ecosystems. As Confucius put it: 'It is Man that can enlarge the Dao which he follows, and not the Dao that can enlarge men' (Confucius, 15:28) and for Daoists, this involves living in accordance with the ways of nature. It is then perhaps appropriate that Chinese environmentalists have been at the forefront in promoting the notion of an ecological civilization. However, in doing so, they are incorporating ways of thinking from European civilization, most importantly, the science of ecology, the notions of liberty and democracy, and histories of the rise and fall of civilizations. Of course, the notion of ecological civilization is utopian, but it is a dream that wants to be realized, and in doing so, is revealing the contingency of the present order. It is a call for action. As Ernst Bloch wrote in the introduction to his work *The Spirit of Utopia*, 'I am. We are. That is enough. Now we have to begin. Life has been put in our hands' (Bloch, 2000, 1).

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