

## 4. Life Sustains Life 1

### *Value: Social and Ecological*

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I would like to address the question of social and ecological value by bringing two approaches to this question into conversation with one another and show their connections. The two approaches are those of Jonathan Schell and Akeel Bilgrami. The connection between the two approaches is their shared interest in the ‘conditions that sustain life’ on earth. The answer to the question of what are the conditions that sustain life is, in my opinion, ‘life sustains life’: that is, living ecological systems sustain themselves and the living systems with which they interact (symbiosis).

#### 1. Jonathan Schell’s project

I see Jonathan Schell’s current project as trying to provide a perspicuous representation of the ecological crisis of the present.<sup>1</sup> He begins with the concept of the Anthropocene yet goes beyond it. He is searching for a perspicuous representation of the Anthropocene that performs two roles.

The first role of his perspicuous representation of the Anthropocene is to bring out *deep and crucial aspects* of the present crisis that are concealed, obscured or misrepresented in other formulations of the Anthropocene (by Crutzen, Hansen, Lovelock, Stern, IPCC and so on).<sup>2</sup> That is, his representation of the Anthropocene is *world disclosing*.

He does this in part by describing both the global effects of the Anthropocene and the processes that bring them about. The processes that bring about the destructive effects of the Anthropocene are such things as the link between modern science and

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<sup>1</sup> Jonathan Schell, ‘On the Anthropocene’, and ‘The Human Shadow’ (Unpublished manuscripts).

<sup>2</sup> For example: Paul Crutzen and Hans Günter Brauch (eds) *Paul J. Crutzen: A Pioneer on Atmospheric Chemistry and Climate Change in the Anthropocene* (New York: Springer, 2016); James Hansen, *Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity* (New York: Bloomsbury, 2009); James Lovelock, *Gaia: A New Look at Life on Earth*, 3rd edn (Oxford: Oxford University Press, 2000 [1979]); Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007); *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Geneva: Intergovernmental Panel on Climate Change, 2015).

its application, the development of capitalism in Europe and its spread around the world, the domination and exploitation of nature, the rapid increase in population, militarism, and so on, and the complex ways in which the effects of these process on the living earth and atmosphere generate positive feedback loops that tend to amplify their destructive effects: climate change, polar ice melt, deforestation, desertification, the acidification of the oceans, and so on. These complex effects in turn affect population growth, inequality, life chances, starvation, mass migrations, agricultural, resource and water wars, neo-colonial appropriation of land and water, failed states, increased militarisation, and the positive feedback effects these complex processes have on global warming and the destruction of the conditions of life on earth – in increasingly vicious circles.<sup>3</sup>

I will call these processes over the last 300 years, insofar as they are destructive, *processes of modernization* for shorthand (they are called globalization, commodification, growth, imperialism, industrialization, neo-liberalism and so on in various schools of thought).

The second role of his perspicuous representation is to bring out aspects of the Anthropocene and the processes that bring it about that help us to see how to respond to the crisis, and even, hopefully, to be moved to respond as citizens. That is, the perspicuous representation is also *action-guiding* as well as *world-disclosing*.

The key feature of the Anthropocene for Jonathan Schell is, I believe, the following. The human activities and form of life embodied in the processes of modernization are not only destroying life on the planet (biodiversity) but also, and more fundamentally, destroying the very conditions of life on earth (for many species). They are destroying the ecosystems that sustain life. This trend of the destroying the conditions of life on earth for thousands of species, including Homo sapiens, and it is bringing about a sixth mass extinction of species and ecosystems.<sup>4</sup>

The question at the heart of this way of disclosing the present is, therefore: What are the “conditions of life” and How can we “sustain rather than destroy” them?

## 2. Akeel Bilgrami’s project

It is my opinion that Akeel Bilgrami is engaged in a somewhat similar project. He seeks to give a perspicuous representation of the form of life that developed in Europe, beginning in the scientific revolution of the 17<sup>th</sup> century, and then spread around the world by European imperial and economic expansion. That is, he is

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<sup>3</sup> Lester R. Brown, *World on the Edge: How to Prevent Environmental and Economic Collapse* (New York: Norton, 2011).

<sup>4</sup> Elizabeth Kolbert, *The Sixth Mass Extinction: An unnatural history* (New York: Henry Holt and Company, 2014).

seeking to give a more historical and genealogical account of central features of the same dominant form of life as Schell: that is, the processes of modernization that are bringing about the Anthropocene crisis.

Bilgrami seeks to disclose central features of this modern way of life in terms of the concept of an *alienated form of life*.<sup>5</sup> Three of the main features of this way of life as alienated are:

- (1) A disengaged or disembedded stance of humans *vis a vis* nature;
- (2) A working relationship of control, mastery and domination of nature embedded in our working relationship to nature, and;
- (3) The presupposition that nature is devoid of intrinsic value and norms. Values and norms are assumed to derive from the autonomous human mind and are imposed by humans on a non-normative world.
- (4) I would like to amend number three in the following way: when moderns do see values and norms in nature, they tend to see values and norms that naturalise or reinforce the patterns of organization of modern institutions: a war of all against all (Hobbes), asocial sociability (antagonism) (Kant), and struggle for existence (Malthus, Darwin) all serve to legitimate the institutionalised forms of competition among individuals, groups, companies and states that, in their view, lead to the development of the human species.<sup>6</sup>

As we can see, these features overlap with the features in Schell's approach.

The second dimension of Bilgrami's project is to give a perspicuous representation of an unalienated way of life in contrast. Three of the main and contrasting features of an unalienated way of life are:

- (1) Humans see themselves participants in nature, in the ecosystems in which they live;
- (2) From this participatory perspective, when humans act, they engage with nature: they interact in ecological relationships. They do not stand above and control.
- (3) When humans act and experience the world in accordance with steps 1 and 2 the world is disclosed to them as alive (composed of living systems) and of value (there is no non-evaluative language of description of being in the world from this

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<sup>5</sup> Akeel Bilgrami, *Secularism, Identity and Enchantment* (Cambridge MA: Harvard University Press, 2014), 101-216.

<sup>6</sup> We see this in Charles Mann, E. O. Wilson and others, cited below.

perspective). Nature is seen and experienced to be suffused with values and norms that can be seen to involve responsibilities: that is, norms that are *action-guiding*

The distinction between alienated and unalienated ways of life maps on to Anthony Laden's distinction between two types of reasoning: reasoning-over and reasoning-with.<sup>7</sup>

### 3. Life sustains life is their common ground

I think it is easy to see the overlap and connections between the two complementary projects.

The dominant way of life that is described as 'alienated' is the same way of life that is bringing about the destructive effects of the Anthropocene: that is, the destructive side of processes of modernization. It complements Schell's account (and many others).<sup>8</sup>

The unalienated way of life - as a response to the ills of this alienated way of life - is also a possible response to the crisis of the Anthropocene that this modernizing way of life brings about and reproduces.

Recall that the key feature of the way of life that brings about the Anthropocene is that it destroys the natural or ecological conditions of life. Now, if humans move around to the unalienated way of life, see themselves as participating in the ecological conditions of life, engaging with them, and, third, they discover norms that move them not to destroy these conditions of life, as in the current predicament, but rather to not-harm them and sustain them, then the unalienated way of life is indeed a response to the Anthropocene.

I would like to argue that this is the case. When humans participate in and engage with the ecological conditions of life on earth (ecosystems), they discover intrinsic, living and action-guiding normative relationships of cooperation and competition that sustain rather than destroy these conditions of life. Learning from and getting in tune with these life sustaining normative relationships of interdependency is the way to respond to the life-destroying features of the Anthropocene. That is, to see humans as members and citizens of a living commonwealth of all forms of life with civic responsibilities to sustain the conditions of mutual dependency and co-evolution.

This is of course the deep ecology view. But it is also the view of the most advanced life sciences and earth sciences over the last fifty years.

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<sup>7</sup> Anthony Simon Laden, *Reasoning: A Social Picture* (Oxford: Oxford University Press, 2012).

<sup>8</sup> Cited above.

(1) The basic unit of life is not the individual or the species but ecosystems or living networks.<sup>9</sup>

(2) Moreover, the patterns of self-organisation and self-reproduction (autopoiesis) of interdependent living systems are not struggles for existence, but, as Lynn Margulis has shown, predominately symbiosis and symbiogenesis.<sup>10</sup> Living systems tend more over time to reproduce and transform themselves and the living systems with which they interact than to destroy themselves and their neighbours, or life on earth would not have evolved as it did.

(3) Further still, an emergent property of the webs of life as a whole is the self-regulation of the earth and its atmosphere so as to sustain life on earth: the Gaia theory of Sir James Lovelock.<sup>11</sup> The Gaia theory is symbiosis at the planetary level.

(4) Finally, humans *can* learn from the symbiotic patterns of organisation of these living systems of how to organise their own living systems of communities of practice that sustain life (see below).

The mantra for this fourfold hypothesis is the saying “life sustains life”.

For example, Stephen Harding:

“The key insight of the Gaia theory is wonderfully holistic and non-hierarchical. It suggests that it is the Gaian system as a whole that does the regulating, that the sum of all the complex feedbacks between life, atmosphere, rocks and water gives rise to Gaia, the evolving, self-regulating planetary entity that has maintained habitable conditions on the surface of the planet over vast stretches of geological time.”<sup>12</sup>

And Lynn Margulis:

“Gaia is not an ‘organism’ but an emergent property of interaction among organisms. Gaia is the series of interacting ecosystems that compose a single huge ecosystem at the earth’s surface. Gaia is symbiosis on a planetary scale.”<sup>13</sup>

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<sup>9</sup> Harold Morowitz, *The Emergence of Everything* (Oxford: Oxford University Press, 2002).

<sup>10</sup> Lynn Margulis, *Symbiotic Planet: A New Look At Evolution* (New York: Basic, 1998).

<sup>11</sup> Lovelock, *Gaia*.

<sup>12</sup> Stephen Harding, *Animate Earth: Science, Intuition and Gaia* (White River Junction: Chelsea Green, 2006), 64.

<sup>13</sup> Margulis, *Symbiotic Planet*, 120.

If this is correct, then the very norms that could guide humans from a way of life that is destroying the conditions of life towards a way of life that sustains the conditions of life can be found in the self-organizing and self-sustaining patterns of interaction of the living conditions of life themselves. That is, this understanding of the “conditions of life” connects Schell’s and Bilgrami’s projects.<sup>14</sup>

#### 4. Misrepresenting and destroying the conditions of life

Once we see this account of the living world and our engaged place within it, we can see how Bilgrami’s three features of the alienated life of modernization misrepresent and occlude the “conditions of life”. The disengaged and disembedded stance, the relation to the world of control and mastery, and the view that all value and norms come from the human mind alone literally alienate us from the living world. Human autonomy is purchased at the price of earthly alienation.

This dominant human form of life and its mode of representation make it difficult to see the connected ways in which our human activities are destroying the living relationships that sustain life.

For example, as Bilgrami puts it, through this mode of world disclosure nature is seen as a repository of “opportunities” to satisfy the “states of minds” of humans (values, interests, utilities, projects, etc) through its use and exploitation by corporations and states. The role of the social sciences is to link the opportunities or resources of nature with the utilities of humans.

Another example is Karl Polanyi’s analysis of the rise of the unique capitalist economy in the nineteenth century. In *The Great Transformation* Polanyi showed, for example, how the commodification of the natural world causes us to overlook its living systems and to treat the effects of commodification as externalities.<sup>15</sup> The commodification of living systems as “resources” dis-embeds them from the symbiotic relationships in which they exist and re-embeds them in the abstract economic, legal, political and institutional relationships of the global capitalist economy. The effects this radical transformation has on the underlying living ecosystems in which these processes of extraction, production and consumption take place cannot be seen from within this alienated form of representation of them. When the damage and destruction is seen, they are treated as externalities and indirect

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<sup>14</sup> One of the first people to try to sketch out a very general account of how this might work is Fritjof Capra, *The Hidden Connections: A science for sustainable living* (New York: Anchor Books, 2002). He tried to bring together the life sciences, the Santiago theory of cognition, complexity theory, systems theory and feedback loops, Gaia Theory, social theory and social networks theory.

<sup>15</sup> Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon, 2004).

costs, and thus not taken into economic account. This is the fundamental flaw at the heart of our system of economics and the major cause of the ecological crisis.<sup>16</sup>

Polanyi also argued that the commodification of individual and collective labour power of humans was another 'fictitious commodity' that amplified this alienation. By turning labour power into a commodity capitalism disembods its exercise from the living human beings and the social relationships in which they live and on which they are interdependent. It then re-embeds labour power and labourers into the abstract, competitive and alienating relationships and institutions of the global economy. As a result, humans under capitalism internalise the form of representation and way of acting on nature and each other encapsulated in Akeel Bilgrami's three features of an alienated life (as Marx, Adorno and Horkheimer, and Gandhi also argued).

The result, Polanyi predicted in 1944, would be the destruction of the social and natural world.

## 5. Discounting ecological destruction and climate change

Now, let's turn and look briefly at the responses to the Anthropocene and the scientific evidence of climate change, global warming, and so on that is destroying the living conditions of life.

*First*, if it is correct to say that the alienated form of self-consciousness characteristic of modern subjectivity and brought about by the three features Bilgrami foregrounds causes us to overlook the living networks in which we exist and on which we co-depend and co-evolve; then this helps us to understand why people deny or discount the Anthropocene, the damage it brings about, and the threat it poses.

Aldo Leopold diagnosed this ailment of not seeing the damage one is doing to the conditions of life by the way we are living, because we inhabit our way of life and do not reflect on it as way and its effects. We see the world through its frame (the three features Akeel lays out). Leopold:

"One of the penalties of an ecological education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to laymen. An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise."<sup>17</sup>

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<sup>16</sup> Brown, *World on Edge*.

<sup>17</sup> Aldo Leopold, *The Sand County Almanac* (Oxford: Oxford University Press, 1949), 197.

(Note the combination of false belief and weakness of the will in the last sentence.)

In *Our Ecological Footprint*, Mathias Wackernagel and William Rees list three main strategies of denial and discounting the overshooting of the carrying capacity of the conditions of life on earth and its destructive consequences:<sup>18</sup>

1. The boiled frog syndrome: the brain functions so that slow changes, long term implications and multiple connections cannot be easily seen.
2. Mental apartheid: the psychological barrier between modern humans and the rest of reality: perceptual dualism since Descartes.
3. The idea of the tragedy of the ungoverned commons, from Hobbes' state of nature to Hardin's analysis, makes it appear that the only alternative is privatization (and this becomes our present tragedy). So, there appears to be no other possibility.

I think all three of these strategies can be seen as consequences of Bilgrami's alienated form of life.

4. But, I think the really basic one is that our alienated way of life causes us to overlook the living earth and to represent it as resources for production and consumption, whether capitalist or Marxist. We do this because of the background picture of humans rising, through stages of historical development, to a position of independence of the world and standing in a stance of command and control over it. Thus, the only alternative is to be under the control of natural forces that we do not understand, in a position of heteronomy. This is the position attributed to 'primitive' and 'less-developed' societies in this modernist worldview, as Franz Boas classically argued in 1911:<sup>19</sup>

Proud of his wonderful achievements, civilized man looks down upon the humbler members of mankind. He has conquered the forces of nature and compelled them to serve him. He has transformed inhospitable forests into fertile fields. The mountain fastnesses are yielding their treasures to his demands. The fierce animals which are obstructing his progress are being exterminated, while others which are useful to him are made to increase a thousand fold. The waves of the ocean carry him from land to land, and towering mountain-ranges set him no bounds. His genius has moulded inert matter into powerful machines which await a touch of his hand to serve his manifold demand.

With pity he looks down upon those members of the human race who have not succeeded in subduing nature; who labour to eke a meagre existence out of the products of the wilderness; who hear with trembling the roar of the wild animals, and see the products of their toils destroyed by them; who remain restricted by oceans, rivers or

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<sup>18</sup> Mathias Wackernagel and William Rees, *Our Ecological Footprint* (Gabriola Island: New Society, 1996).

<sup>19</sup> Franz Boas, *The Mind of Primitive Man* (New York: McMillan Publishers, 1923 [1911]), 4-5.



mountains; who strive to obtain the necessities of life with the help of few and simple instruments.

Such is the contrast that presents itself to the observer. What wonder if civilized man considers himself a being of higher order as compared to primitive man, if he claims that the white race represents a type higher than all the others!

The third possibility of humans being in relationships-with the living earth drops out of the picture.

In *The Nature Principle*, Richard Louv argues that the denial and discount is the result of a “nature deficit disorder”. That is to say, if we grew up and lived in an unalienated form of life in which we participated in and engaged with the living networks in which we in fact live, and if this was also the representation and self-understanding of the human condition, then these blind spots, barriers and tragedies would be overcome:

That is: long term implications and multiple connections in (1) would be easily seen; the psychological barrier between modern humans and the rest of reality would be overcome in (2), and the binary of either the ungoverned commons or global privatization of (3) would be seen to overlook a third possibility: sustainable modes of “cooperative commons” modeled on and interacting with non-human living systems of symbiosis and symbiogenesis.

## 6. The ‘alienated’ response to the crisis 1

*Second*, there is response to the Anthropocene that takes it seriously. This response sees the earth as composed of living systems that form the conditions of life and these conditions are under imminent threat. These authors write of *Our Dying Planet* (Peter Sale), *Collapse* (Jared Diamond), *The Revenge of Gaia* (James Lovelock), *The Social Conquest of the Earth* (E. O. Wilson), and “Does success spell doom for *Homo sapiens*?” (Charles Mann).<sup>20</sup> They also present a response they believe can save *Homo sapiens* from destruction or a 6th mass extinction.

This is perhaps the dominant response to the Anthropocene. It is advanced by neo-Malthusians and neo-Darwinians. Let’s call this response the Medea Hypothesis, as Peter Ward does in his influential book of 2009.<sup>21</sup>

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<sup>20</sup> Peter Sale, *Our Dying Planet An Ecologist's View of the Crisis We Face* (Berkeley: University of California Press, 2011); Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Penguin, 2005); Lovelock, *The Revenge of Gaia: Earth's Climate Crisis & The Fate of Humanity* (New York: Basic, 2007); E. O. Wilson, *The Social Conquest of Earth* (New York: Norton, 2012); Charles Mann, “State of the Species: Does success spell doom for *Homo sapiens*?” *Orion Magazine* (November/December 2012).

<sup>21</sup> Peter Ward, *The Medea Hypothesis: Is Life on Earth Ultimately Self-Destructive?* (Princeton: Princeton University Press, 2009).

On this view, humans, like Medea, are destined to destroy their own children. That is, *Homo sapiens*, since the beginning of their migration out of Africa 100,000 to 50,000 years ago are programmed to destroy not only other humans and non-human species, as Darwin argued: but also, *beyond Darwin*, the consequence of success in these exterminating struggles for existence, they also destroy the ecosystems and, eventually, Gaia: the conditions that sustain life on earth.

These hyper-Darwinians argue that the only response is a massive and global project to bring human activities and population under the command and control of some kind of global authority that can act as 'the mind of Gaia' and save humanity from itself. They see *Homo sapiens* as evolving in such a way that they come to know and understand how Gaia works and how to save it at exactly the last moment before they destroy it (a repetition of the 19<sup>th</sup> century dogma that the greatest danger gives rise to the greatest insight and salvation).

This response is likened to the command and control of the war effort in World War II and other such projects. Even James Lovelock, the founder of the Gaia Theory, is a proponent of this hyper-Darwinian analysis and Faustian response.

I think there are two dubious features of the Medea Hypothesis and its Faustian response.

First, the Medea Hypothesis sees the natural world as alive and infused with normative relationships, but it mistakes norms of conquest and extermination for the dominant norms of living systems, whereas biologists, paleontologists and archeologists have known since Kropotkin that genocidal competition and extinctions have always been enveloped within larger and deeper living relationships of cooperation and non-exterminating competition (such as co-sustaining predator-prey relationships).

This hypothesis blows out of proportion the trend of the last 200-300 years of overshooting and destroying the carrying capacity of the living earth and its consequences in the age of industrialisation, cheap carbon fuels, economic globalization, population explosion and their consequences. It then projects these trends back 50,000 to 100,000 years, or to the beginning of the agricultural age 11,000 years ago. It highlights and generalises isolated incidents of struggles for existence that lead to the extermination of opponents, the population increase of the victors into 'super organisms', and then this leads to the destruction of the carrying capacity of the regional biosphere - such as Easter Island.

It makes it appear that the co-evolution of life on earth is *predominantly* a series of conquests followed by the destruction of the underlying conditions that sustain the conquerors (a new "gravediggers' dialectic" so to speak).

If many biologists, archeologists, anthropologists and ecologists are correct, this conquer-conquest-destruction representation of human and biological history is false. It over-emphasises destructive and exterminating struggles and radically under-emphasises the broader living networks of symbiosis on which these struggles are parasitic and which, for the most part, contain competition to forms that do not lead to extermination but to sustaining ecosystems as a whole.

Gandhi diagnosed this kind of Darwinian view of history in *Hind Swaraj* in 1909.<sup>22</sup> He argued that moderns are taught to history and biology and economic development as a series of battles and conquests. However, if life were a war of all against all or a struggle for existence, life on earth would have ended ages ago. Rather, humans and non-humans learn ways to live together and settle their disputes nonviolently or with types of violence – such as predator and prey relations between deer and coyote – that keep species and the ecosystems on which they interdepend in rough equilibrium; punctuated with occasional rapid and drastic change.

That is, this response overlooks or underplays the living networks of symbiosis and mutual aid that have sustained the co-evolution and complexification of forms of life for millions of years. Life in general and *Homo sapiens* in particular have evolved through the development of living networks, not through relations of conquest and control. Donald Worster, America's leading ecological historian, argues that it is doubtful that anyone from any other civilization than modern Western civilization would even understand this view of nature inherited and inflated from its nineteenth origin in Townsend, Malthus, Lyell, Darwin, Huxley and the social Darwinians such as Spenser, Nietzsche and Freud.<sup>23</sup>

So, I would agree with Schell, Bilgrami, Timothy Mitchell<sup>24</sup> and many others that the situation we are confronted with in the Anthropocene age of the last 200-300 years is unique, and it is unique for the reasons Bilgrami gives: namely, the way in which, since the 17<sup>th</sup> century, it overlooks and overrides the participation in and engagement with living networks of complex forms of life.

There were of course exterminating struggles for existence throughout history, five mass extinctions, and *Homo sapiens* have been aggressive disturbers since their spread from African to around the world over 150,000 years. But extermination, extinctions, biocide and ecocide were not the dominant factors; symbiosis and co-evolution were larger factors, as the Gaia theory has rediscovered, or life would not have continued to grow and become more complex. It is only in the last 300-400

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<sup>22</sup> M. K. Gandhi, *Gandhi: Hind Swaraj and Other Writings*, ed. by A. Parel (Cambridge: Cambridge University Press, 2007), Chapter 17.

<sup>23</sup> Donald Worster, *Nature's Economy: A history of ecological ideas* (New York: Cambridge University Press, 1994).

<sup>24</sup> Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London: Verso, 2011).

years – the centuries of European imperialism and rapid economic development – that biocidal or ‘imperial’ factors have become predominate over symbiotic or ‘Arcadian’ factors, and thus ushered in the Anthropocene.<sup>25</sup>

## 7. The ‘alienated’ response to the crisis 2

The second feature of the Medea Hypothesis that places it firmly within the alienation framework is its recourse to global organisations of command and control as the means to save humanity from destruction. This is a double mistake.

First, it fails to see that the way life is sustained within living networks is not through relationship of conquest or command and control, but through relations of cooperation and non-exterminating competition within and among species and their ecosystems. The multiplicity of living networks that comprise the earth system exhibit countless varieties and variations of cooperative and competitive interaction – of participation in and engagement with other forms of life.

Second, if life has survived and co-evolved by these means, then humans can learn from them how to participate in and engage with these living networks in a non-destructive and mutually sustaining way. Humans can learn something about their own forms of living organisations from nature.<sup>26</sup>

This is heretical from the alienated perspective, according to which nature can teach humans nothing about sustainable forms of human organisation. It is also heretical from the Medean perspective, according to which nature teaches us to employ command and control over nature to rescue humanity from the destruction that conquest, command and control has brought about.

The great question is how can we learn from nature in time? It seems to me that there are three distinct types of learning processes.

The first of course is to understand how living systems bring living systems into being through symbiosis (autopoiesis) and sustain and complexify them, from microbes and bacteria to mammals, complex ecosystems and Gaia. This is the great work of the life sciences since World War II.

The second is for humans then to learn how live and interact with and in them in such a way that they harm them as little as possible, on the one hand, and care for and help to sustain them on the other (stewards of mother earth). And this includes of course how to repair the damage that we have done.

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<sup>25</sup> Worster, *Nature's Economy*, cited above.

<sup>26</sup> Ellen LaConte, *Life Rules: Nature's Blueprint for Surviving Economic and Environmental Collapse* (Gabriola Island: New Society, 2012).

The third and youngest science is to learn from sustainable living systems how to organise and operate self-sustaining and mutually supportive living organisations (networks) of human beings in their various activities: forms of organisations that create zero emissions; set up communities and networks of organisations that use each other's waste so everything is recycled and reused ( the 'cradle to cradle' approach); in short the plethora of initiatives that apply self-sustaining life rules to human organisations or 'communities of practice'.<sup>27</sup>

This is how Fritjof Capra sees these three types of education in *Hidden Connections*:

“The key to an operational definition of ecological sustainability is the realization that we do not need to invent sustainable human communities from scratch but can model them after nature's ecosystems, which are sustainable communities of plants, animals and microorganisms. Since the outstanding characteristic of the Earth household is its inherent ability to sustain life, a sustainable human community is one designed in such a manner that its ways of life, businesses, economies, physical structures, and technologies do not interfere with nature's inherent ability to sustain life. Sustainable communities evolve their patterns of living over time in continual interaction with other living systems, both human and non-human. Sustainability does not mean that things do not change; it is a dynamic process of co-evolution rather than a static state.”<sup>28</sup>

By 'modelling' sustainable human networks after nature's ecosystems, Capra does not mean 'imitate' nature. He gives full weight to the differences between Homo sapiens and other species (reflective consciousness, meaning, language, power, and so on) and summaries the ecological norms that can be used to guide humans in building sustainable communities.<sup>29</sup>

### **8. Life sustains life is not only the end but the means, the way**

If this analysis is partially correct, then the right response to the Anthropocene is not more attempts to command and control human and non-human forms of life on the planet. It is not to treat forms of life a things or means to be moved by imperatives and coercion, but to interact with them as they interact: as interdependent living beings or “interbeings”.

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<sup>27</sup> William McDonough & Michael Braungart, *Cradle to Cradle: Remaking the way we make things* (New York: North Point Press, 2002).

<sup>28</sup> Capra, *Hidden Connections*, 230-1.

<sup>29</sup> Capra, *Hidden Connections*, 73, 231.

This would involve coming to see and to act in accord with the values or norms of “sustaining life by means of sustaining life” that, as we have seen, “suffuse” nature, to use Bilgrami’s phrase (and also to see the subordinate role conquest and extermination have played until now). Learning from it would be the first step towards an unalienated life in Bilgrami’s sense, and, at the same time, the first step in a response to the Anthropocene in Schell’s sense.

On this view means and ends are one and the same. The way to an unalienated life and to transform the Anthropocene into a self-sustaining Gaia complex is by means of unalienated participation in and engagement with other living networks: that is, the three lessons mentioned earlier.

Now, this Gaia ethic is not something that we learn only from nature. Many if not all the great ethical and spiritual traditions teach the same lesson. They share the basic ethical norm of *ahimsa* in its negative and positive sense. This is the ethical precept that we should avoid harming any living being as much as possible on the one hand and should also help to care for and sustain living beings on the other. We should do this in everything we say and do in everyday life – in every breath we take.<sup>30</sup>

We only need to extend this predominantly human-centred ethic to the biotic communities in which we live and breathe. As Aldo Leopold put it in *The Sand County Almanac*:

“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 the community, but his ethics prompts him also to cooperate (perhaps in order that there may be a place to compete for).

The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or, collectively: the land.

In short, 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.

In human history, we have learned (I hope) that the conqueror role is eventually self-defeating. Why? Because it is implicit in such a role that the conqueror knows, *ex cathedra*, just what makes the community clock tick, and just what and who is valuable, and what and who is worthless, in community life. It always turns out that he knows neither, and this is why his conquests eventually defeat themselves.”<sup>31</sup>

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<sup>30</sup> Stephanie Kaza, *Mindfully Green: A Personal and Spiritual Guide to Whole Earth Thinking* (Boston: Shambhala, 2008).

<sup>31</sup> Aldo, *Sand County*, 239-40.

An ethic presupposes some “mental image of land” as a “biotic system”. It is not only a mental image that is required, but also, “we can be ethical only in relation to something we can feel, understand, love, or otherwise have faith in.”<sup>32</sup>

Millions of ordinary human beings, individually and collectively in communities and networks, have begun to learn this lesson since 1949, and especially since Rachel Carson, *The Silent Spring*,<sup>33</sup> and then the effects of global warming and climate change mentioned by Schell and catalogued by Lester R. Brown, the Stern Report and others. They have begun the difficult task of transforming themselves into unalienated plain members and engaged citizens of the ecosystems that sustain them.

There is no other way to bring about a sustainable world than by participating in and engaging with the living systems in which we exist. The end is the way, as Gandhi put it, or the way is constitutive of the end. The activity of disengaging from the alienated and destructive way of life and gradually acting in accord with the unalienated way of life involves difficult and transformative individual and collective practices of everyday life. As we begin to take the first two steps in Akeel Bilgrami’s unalienated way of life – of participating in and engaging with the ecosystems in which we live and breathe and have our individual and collective being – the ‘world’ begins to ‘show up’ for us as not only valuable but the condition of all value: as a living system that sustains all life. The world is disclosed as Gaia. But, it only ‘shows up’ for us in this way if we engage in the daily sustaining practices of participation and engagement. The insight is not based on reasoned argument alone, but also on beginning to try to live and experiment with the mutually sustainable ways of life. In Wittgenstein’s wonderful phrase, as we begin to engage in this ‘way of life’, then ‘the light dawns slowly on the whole’.

### **9. The relation between knowing and being: the fourth feature of the alienated and unalienated ways of life**

Once we see this relationship between practice and wisdom concerning our place in the world we overcome what I will call the fourth feature of the alienated way of life. This is the presumption that humans can know the good life without becoming good themselves. This presumption – the so-called “Cartesian Moment” – is the great dividing line between ancient and modern philosophy.<sup>34</sup> For the ancients there were always practices of the self that one had to undergo as the condition of knowledge, of

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<sup>32</sup> Aldo, *Sand County*, 251.

<sup>33</sup> Rachel Carson, *The Silent Spring* (Boston: Houghton Mifflin Company, 1962).

<sup>34</sup> Michel Foucault, *The Hermeneutics of the Subject: Lectures at the Collège de France 1981-1982*, ed. by Frédéric Gros (New York, Picador, 2005).

wisdom, and these were of course ethical practices that, once engaged in, gradually disclosed the meaning and value of the world for the novitiate. Philosophy was literally a 'way of life'.<sup>35</sup>

Modern philosophy since Descartes has been based on the premise that we can know the truth and the good without engaging in the practices of becoming truthful and good ourselves. And this alienation of knowing from the means of knowing is paralleled in social sciences in the separation of means and ends in modernization theories: wars can lead to peace and authoritarian rule can lead to democracy are the two widely held examples, as Arendt argues in *On Violence*. She argued that the presumption of a 'contingent' relation between means and ends' legitimated rapid development and the arms race to spread and protect it, and that, as a result, these 'processes of modernization' are out of control, can no longer be called 'progress', and will lead to the destruction of life on earth.<sup>36</sup>

This modern view of the contingent relation between knowing and being was challenged by William James and his 'ancient' argument that 'knowing is dependent on and conditioned by being' (or ways of knowing or ways of being). This internal relation between being and knowing is the foundation of pragmatism (and of a certain strand of Marxism). It has been articulated by Aldous Huxley, Maurice Merleau-Ponty, Jonathan Schell, Michel Foucault, Ludwig Wittgenstein, and others.<sup>37</sup> In the terms of the Santiago Theory of Cognition, 'a mode of being (or living) brings forth a world'.<sup>38</sup> This is what I will call the fourth feature of the unalienated life: means are constitutive of ends.

In many non-modern civilizations, especially indigenous civilizations, when youth participate in and engage with the world in mutually sustainable ways the earth is disclosed to them as 'mother earth' and this in turn as a natural 'gift economy' of which they are always already participants. That is, they see themselves as members of ecological relationships of gifts (the goods and services nature supplies), of the attitude of gratitude for the gifts, and of duties of reciprocity to the ecosystems that provide the sustenance. That is, they are inducted into the living cycles of gift-gratitude-reciprocity that sustain life on earth and they are thereby moved to engage

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<sup>35</sup> Pierre Hadot, *Philosophy as a Way of Life: Spiritual Exercises from Socrates to Foucault*, ed. by Arnold Davidson (Malden: Blackwell, 1995).

<sup>36</sup> Hannah Arendt, *On Violence* (Orlando: Harcourt, 1969).

<sup>37</sup> Aldous Huxley, *The Perennial Philosophy* (London: Chatto & Windus, 1946); Hadot, *Philosophy*; Maurice Merleau-Ponty, *The Phenomenology of Perception* (London: Routledge, 2012), Jonathan Schell, *The Unconquerable World: Power, nonviolence and the will of the people* (New York: Henry Holt, 2002), Foucault, *The Hermeneutics of the Subject*.

<sup>38</sup> Fritjof Capra, "The Santiago Theory of Life and Cognition," *la revista Be-Vision* 9:1 (1986).



accordingly in these life-sustaining cycles. As they say, 'we take care of mother earth and she takes care of us'.<sup>39</sup>

This practice-based view of knowing-how and knowing-that has not been completely lost even in the alienated modern west. Steady-state economists like Herman Daly, Polanyi and Charles Eisenstein, deep ecologists like Arne Naess, Richard Louv and David Abram, ethicists like Stephanie Kaza and Patrick Curry, all present arguments for this gift economy orientation and model sustainable human economies on the natural gift economy (as does Capra).<sup>40</sup> The idea that there is a "subsistence gift economy" in all pre-modern societies and it continues to exist within capitalist societies (the neighbourhood and volunteer sectors, for example), and that capitalist economies are parasitic upon it, was first brought to prominence by Marcel Mauss in his book *The Gift*.<sup>41</sup> After writing *The Great Transformation* Polanyi turned to economic anthropology and rediscovered the gift economy in non-Western societies. In 1980s in France Gilbert Rist published his famous critical history of the capitalist 'developmental' or 'growth' economy as based on blind 'faith' rather than economic rationality, and argued for a move forward to renewed gift economies.<sup>42</sup> During the same period, Fritz Schumacher, in *Small is Beautiful*, showed how gift economies could replace rapid development capitalist and communist economies and be more efficient.<sup>43</sup> This was carried forward by Charles Eisenstein in *Sacred Economies* and Vandana Shiva, *Earth Democracy*.<sup>44</sup> In these latter works, the human gift economy is modeled explicitly on the ecological gift economy and its symbiotic and cyclical relationships of interdependency. These works, and especially Schumacher's, have been influential in the spread of local and networked gift economies (economic cooperatives and community-based economies) throughout the world.

Of equal importance, Aldo Leopold laid out steps in a practical education system that would bring students to see, appreciate and revere nature and all forms of life in

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<sup>39</sup> James Tully, 'Reconciliation Here on Earth', in Michael Asch, John Borrows & James Tully, eds. *Reconciliation and Resurgence: Indigenous-Settler Relations and Earth Teachings* (Toronto: University of Toronto Press, forthcoming).

<sup>40</sup> Herman Daly, *Beyond Growth: The Economics of Sustainable Development* (Boston: Beacon, 1987); Polanyi, *Great Transformation*; Charles Eisenstein, *Sacred Economics: Money, Gift, and Society in the Age of Transition* (Berkeley: North Atlantic Books, 2011); Arne Naess, *Ecology, community, and lifestyle* (Cambridge, Cambridge University Press, 1989); Richard Louv, *The Nature Principle: Reconnecting with Life in a Virtual Age* (Chapel Hill: Algonquin, 2011); David Abram, *Becoming Animal: An Earthly Cosmology* (New York: Random House, 2010); Stephanie Kaza, *Mindfully Green: A Personal and Spiritual Guide to Whole Earth Thinking* (Boston: Shambhala, 2008); Patrick Curry, *Ecological Ethics: An Introduction* (Malden: Polity Press, 2011).

<sup>41</sup> Marcel Mauss, *The Gift: Forms and Functions of Exchange in Archaic Societies* (London: Routledge 1990).

<sup>42</sup> Gilbert Rist, *The History of Development: From Western Origins to Global Faith*, 4th edition (London: Zed, 2014).

<sup>43</sup> Fritz Schumacher, *Small Is Beautiful: Economics as If People Mattered* (New York: Harper, 2010).

<sup>44</sup> Eisenstein, *Sacred Economics*; Vandana Shiva, *Earth Democracy: Justice, Sustainability, and Peace* (Berkeley: North Atlantic Books, 2015).

this way, and these are now steps in education systems throughout the world - against the grain of the dominant way of life.

Modern European languages retain traces of this view as well, especially in the term we use to describe the world as we experience it: that is, "the given". The world is a 'gift' and what is entailed by a gift is gratitude and reciprocity. And, as we have seen, what is given to us as a gift is not given to us by some giver standing apart from the world and controlling it. Rather, the gift of life is given to us by the conditions of life – by life itself. Life sustains life. This is the miracle that induces a response not only of gratitude but also of wonder and perhaps awe, as Schell puts it.

However, to experience the given in this world-disclosing and action-guiding way we have to begin to take the steps of the unalienated life in our daily practice, and that is up to each one of us; not just to talk about the change, but to be the change. Whether or not this is too little too late is a question for another time. But, in thinking about the factor of time it is important to remember that on the unalienated view, time is not abstracted and independent of life but interdependent, so it discloses a completely different way of thinking about temporality.