

An alternative Cosmology: the ecological inter-connectedness of all life

In this section we return to the issues raised in section 3 with regard to the “domination over nature” thesis and present an alternative way of seeing and relating to “nature”. **Although debates continue on the meaning of “nature” as a philosophical designation (Görg, 2011)**, we will base the concept of “nature” on a broader cosmological view of the earth and its basic functioning. In this context we will use the word ‘cosmology’ in a very limited sense focused primarily on the earth and its atmosphere as part of the solar system. It will be based on a non-metaphysical and non-essentialist and non-static cosmology. It is a view of the earth that is open-ended, dynamic and unfolding **and closely positioned to what may be described as a metanormative constructivism, although with key differences**. The cosmos and our planet with all that it contains is a living, developing, changing, intricate world that has unexpected and unknown dimensions. Whatever ‘structures’ there are, **they are not necessarily ontological in the sense of a critique of hypostatization**; they reflect a ‘structure within change’ as we indicated in a previous section. Because life itself is unfolding and continues to reveal more and more of itself, there will always be more to discover. We are not masters of the universe; instead we are part of its history. Modern *Homo sapiens* appeared just recently on the scene, gifted with the ability to reflect on themselves and their surroundings. In keeping with our view of epistemology and anthropology, this viewpoint has radical implications not only for our view of the earth (cosmology) but also for our sense of normativity and morality (what we will address later in relation to the notion of phenomenological ethics).

Enlightenment views and practices, especially as it become entwined with the Industrial Revolution and the forces of capitalism, eventually became complicit in today’s radical distortion of the view and use of nature. The objectification and control over nature played a crucial role in this distortion. Although there were counter voices (Bronner, 2004, pp. 161-2) that called for a non-mechanistic and non-objectifying approach to nature, the ‘domination over nature’ triumphed. Reclaiming Enlightenment values will require the formulation of a very different view of “nature” that is more in keeping with or an extension of the basic perspective of the Enlightenment. It will require recognition of the inextricable inter-connection between humans and ‘nature’, or the inter-subjectivity and inter-dependence of all creatures. Any development of the earth and its resources will need to serve the liberation and flourishing of all creatures. We need a ‘re-enchantment of the natural world’ that is not expressive of a romantic or idealistic yearning for paradise, nor symbolic of a return to some essentialist objectifying view. Human freedom and flourishing can no longer be considered apart from the flourishing of our environment. Eco justice and social justice are inextricably intertwined.

5.1 Nature as separate from the human world; the need for a new paradigm

Inherent in the concept of ‘nature’ or the ‘natural world’ is a separation, nature as something distinct from or over against humans and human society (Görg, 2011). This distinction is no

longer tenable as our understanding of the integral unity and inter-connectedness of all of life has grown over the last decades. Much of that knowledge has been brought home to us as a result of the consequences of disregarding the inter-relation of all life-systems. We are an inseparable part of the ecological embeddedness of all life, including human life, health and well-being.

We can no longer distance ourselves from the world of inanimate objects and living creatures. There is hardly an area of the earth – some pristine natural world – that is not touched by human activities. Even those wild, unexplored areas that may still exist in the world are subject to the consequences of changing jet streams and ocean currents, of air and water pollution, of the loss of hundreds of thousands of species of plants and animals, of northward and southward shifting populations of many creatures as a result of warming temperatures. Everything is inter-connected with everything else through a complex of ecological systems, sub-systems and feed-back loops. **Perhaps this is one of the greatest lessons of the science of systems theory.** Nothing exists just by itself. When one species of fish in the ocean is overfished, it can have radical effects on an off-shore fishery somewhere else. When trees are clear-cut in a particular mountainous area, it has drastic consequences for the whole eco system, the watersheds down the valley and mud slides covering whole villages. The emissions of coal generated power plants on one continent may result in air pollution and smog on another continent, as well as adding to the average rise of CO₂. Some of the most isolated and ‘uninhabited’ polar regions are also some of the most polluted areas with rising temperatures and melting perma-frost. The examples are evident everywhere. The human community is inseparably intertwined with all the other non-human communities. Climate change and global warming have greatly underscored this inter-relationship. The free-market ideology and the commitment to unrestricted growth have brought us to the brink of the disintegration of the very foundation of life.

What is required is a profoundly transformative view when it comes to societal relationships with nature (Görg, 2011). Christoph Görg (2011) argues for a dialectical politics. We intend to take the discussion one step further. As we have emphasized earlier, a stand of trees is a part of the tree coverage of a certain area, which is a part of a complex eco system in that location with those inhabitants, which is a part of the regulation of the temperature and the water cycle, which is a part of a larger eco system and various feed-back loops, and so on (De Graaff, 2016). The first and primary way the earth exists is ecologically; everything is inter-twined with everything else; nothing exists in isolation (De Graaff, 2016). This ecological perspective also has its cosmic dimensions. We are a part of a planetary system. What happens on the sun affects us here on earth and the variations in the tilt and the orbit of the earth have an enormous impact on life on earth, resulting in long periods of warming and cooling over the millennia. When examining today’s global warming many studies start by tracing the evidence of previous ice ages and periods of drastic rises in temperature (De Graaff, 2016). There have been many geological shifts in the total ecology of the planet. Most researchers have concluded that today’s rise in temperature is beyond what could be explained by these global changes in temperature over the millennia. Ice cores from previous millennia provide an important base

line for their research. Humans have been slow to catch on to this global and planetary ecological perspective and even slower to honor it (De Graaff, 2016).

The importance of protecting endangered species in different countries, for example, is not just about preserving one particular species of birds, animals, or plants, or even about protecting biodiversity in general, even though that is a serious issue in itself. Each species has its own worth and integrity that deserves protection. However, it helps our understanding even more when we become aware of the crucial role each species plays in the whole of the ecological system (De Graaff, 2016). Protecting plants and animals is about maintaining the integrity and ecological sustainability of the environment as a whole, including the human species. It means that we cannot think about the ocean, the air, the global wind and ocean currents, the fresh water supply, the soil, the land, the forests, or any particular species of animals or the inorganic world apart from the function they have in the total ecological system (De Graaff, 2016). There are many sub-systems and feedback loops that interact with each other. Drastically reducing one species of fish by overfishing or the decline of one kind of seagrass can mean the collapse or decline of an entire fishery. When we destroy, exploit, or pollute one ecological system or region, or one particular species, we often have no idea what the consequences will be until much later, when it may be too late (De Graaff, 2016). At some point there is the danger of the 'tipping points' where even two or three relatively minor changes can set off a chain reaction that is irreversible. .

To gain an understanding of the environmental decline it is not sufficient to focus on one aspect or another or even a few aspects like global warming and climate change. All the ecological systems and subsystems are interlinked and work in tandem. Temporary changes and fluctuations do not change the basic picture. Variations and some temporary 'slowdowns' in temperature, for example, are primarily related to oscillations in atmospheric and ocean currents. They do not change what is happening to the soil, or the fish stocks in the oceans or the decline and pollution of fresh water, or how long some glaciers will take to disappear. It is our human activities that have brought us to this crisis point, our major agricultural practices, our global fisheries, forestry, mining, ways of manufacturing and building, transportation systems, mega-cities with their slums, arms production, politicized justice systems, the numbing effect of the entertainment industry and electronic devices, the distortions and half-truths of the mass media, the deficient health care system and the neoliberal corporate educational systems have all brought us to this point of ecological decline, including human decline (De Graaff, 2016). They mutually reinforce each other and create ecological disintegration, social injustice and untold human suffering (De Graaff, 2016).

Positivistic science, as we have already discussed, reduces reality to its physical dimension, which in turn is broken down into independent parts as so many objects. Each part or variable can then be tested for its role in the complex whole. Such research is assumed to lead to value-free and context-free generalizations, providing 'scientific evidence'. It is this approach – certainly as it becomes an instrument of market ideology – that has and still largely dominates conventional resource management. Reducing physical and organic phenomena to their identity or classification is part of the way in which resources and organisms are objectified in order to master 'nature'. Much of present-day science and technology is in the service of the free-market ideology and unlimited growth. Scientific research and technology could be in the service of human liberation and well-being and the conservation of the earth and the flourishing of all creatures. Instead it primarily serves economic and political domination and the disintegration of the environment.

Capitalist ideology, domination, control, rationalism, scientism, technicism, and economic exploitation mutually reinforce each other, and each aspect plays its role in the distortion of our life-world. *Peoples' worldviews* in the sense of a driving and motivating force, *practical and scientific knowledge* and *practice* form an integral whole and reinforce each other.

To summarize: we need a cosmology that takes its starting point in the *inextricable ecological unity and intertwinement of the inorganic, organic and human world*. "Nature" as a concept is an abstraction that does not exist as such. Considering "nature" as something separate that can be talked about apart from the human interaction and impact on "nature", inevitably leads to the objectification of the natural world. It is one of the ways in which humans take control of and exploit the earth's resources. By contrast, many present-day ecologists have adopted a holistic and integral viewpoint that is based on systems thinking and evolutionary processes (De Graaff, 2016). They use such concepts as 'social-ecological systems' that look at people and nature operating as interdependent systems (De Graaff, 2016). Journals like *Ecology and Society* and *Conservation Biology* are illustrative of this approach. This multi-dimensional unified perspective is also evident in the contributions of eco-socialists that start from the inseparable connection between eco-justice and social justice and the development of a multi-dimensional view of life (De Graaff, 2016). For millennia millions of smallhold farmers, fishers and forest people worldwide have understood much of this inter-dependence of all living communities and have provided for their needs accordingly. In this respect we need to de-colonialize our perspective and develop a mutual appreciation of many peoples' insights and practices. Eco-agriculture and agro-forestry as practiced and developed on many continents today are a good example of such mutual beneficial exchanges of traditional knowledge and practices, scientific insights and technical expertise. (DeGraaff, 2016).

This systemic ecological founding of all life means we are pursuing a cosmology that is open-ended, dynamic and unfolding. The cosmos and our planet with all that it contains is living, developing, changing, intricate, and has many unexpected and unknown dimensions. There are many complex interconnections and dimensions that we are only beginning to understand.. Along with our view of epistemology and anthropology, this perspective has radical implications not only for our view of the earth (cosmology) but also for our sense of normativity and morality (phenomenological ethics). Basing cosmology in the fundamental unity of life without artificial separation and objectification has far-reaching implications for our 'use of nature' (5.2) and the 'objectification of nature' (5.3).

5.2 The use of nature

The argument that 'we cannot avoid exploiting and transforming nature', or that 'not all control over nature is illegitimate' can detract from moving our insight forward. All creatures, including the human species, 'use' other creatures and 'transform' their natural habitat. There are parasitic insects and birds, symbiotic relations that use each other, predators of all kinds, and so on. Different creatures transform their environment and use materials in all kinds of complex and intricate ways. In many ways 'controlling', 'exploiting' and 'transforming' is not an issue in itself. The problem is not whether we can 'use nature'; all creatures do in a manner of speaking. Even posing the question of 'good or bad' and 'legitimate or illegitimate' use can be limiting if it is not followed by an extensive discussion of normative phenomenological criteria for *how* we use the earth's resources and creatures. **The point, again, in systems language, is not that empathy exists, it is the rate of empathy that is the problem.**

The primary question, then, is whether *we are providing for our different needs in an ecologically sustainable way*; that is the first and foremost issue with regard to the 'use of nature'. What effect does providing for our physical and social needs have on the total ecological system and the maintenance of the ecological balance? In our 'control and use of nature' are we respecting ecological boundaries, at least in as much as we have come to know them? Many, if not most industrial practices are not in harmony with these boundaries. Stabilizing the emission of greenhouse gasses by itself will not restore this balance. A second question, closely related, is *what needs and wants do we try to meet and satisfy*, primarily material ones or all human needs, from emotional, social, recreational, creative, relational, to spiritual or the need for meaning? The accumulation and possession of material goods and use of physical services as a primary goal has a profound effect on how we use and exploit resources. Thirdly, do all benefit equally from providing for our needs? These three issues, developing and using resources within ecological limits, honoring the whole range of human needs, for the benefit of all will fundamentally determine how we 'use nature'.

In providing for our needs, can we maintain and keep the complex ecological systems and sub-systems, including the human system, in balance? 'Sustainability' would be a good criterion if it is used in the sense of sustaining the inter-dependent life systems of the earth. In many instances the word sustainability has been co-opted to describe 'sustainable development', which usually means that some very limited or piece-meal environmental safeguards (positioned within the status quo) have been put in place without changing the basic approach to development. Sometimes it is just a claim to reassure or mislead us. It is like the 'greening of the economy', or 'environmentally friendly' products, and a host of other phrases that are co-opted. 'Ecological sustainability' would avoid such misunderstanding, at least for a time.

In this sense most industrial farming, forestry, and fishing practices, fossil fuel extraction, mineral mining, manufacturing of steel, building materials, and cement, production and use of many chemicals, shipping and air freight systems, etc. are unsustainable ecologically (De Graaff, 2016). For each of these practices viable alternatives are available and being practiced in numerous places on every continent. However, without a *radical systemic change* there will be more disintegration, extinction, pollution, poisoning, devastating shortages, and a host of other consequences, like erratic and violent weather, global loss and decline of topsoil, depletion of fresh water, acidification of the oceans, further loss of biodiversity, climate and food refugees, 'overpopulation' and much more (De Graaff, 2016). This is the legacy of our un-economic and exploitative use of natural resources that disregards ecological boundaries and inter-connections. There is no 'natural world' in distinction from the 'human world'. There is only one integrated ecological system of which we are an inseparable part. Our human activities take place within and are part of a total inter-related system. We are not even the 'caretakers' that have 'dominion over the earth', as the miss-interpretation and misuse of Genesis 1 would have it (De Graaff, 2016). Any such views would continue to give humans a superior position in relation to the earth and its resources. Because we can reflect on our actions and are not merely driven by instinct we bear responsibility for *how* and *to what end* and *for whom* we use the earth's resources.

The use we make of the earth's resources is always in the service of a larger vision of life. It either serves the well-being of all creatures or it serves the interests of the few at the expense of all others. *Our ecological vision, our scientific knowledge, our economic practices and our phenomenological ethics mutually reinforce each other.*

5.3 The objectification of nature

Objectification and reductionism play a central role in the violation of ecological boundaries and intertwinements. This process involves a threefold distortion. First of all, phenomena are reduced to their generic identity. A tree is just a tree, perhaps a red pine if that identification

serves a useful purpose, but nothing more. Secondly, phenomena are stripped of their integral wholeness, their ecological setting and the role they play in the larger environment. As we elaborated in a previous section, even the biological classification of organisms can be abstracted in order to determine economic usefulness. Red pines are more useful than aspen. Nor does the classification say anything about the unique role a particular stand of trees plays in a specific environment. Thirdly, once objectified, phenomena can easily be reduced to their economic value. Wood pellets for biomass generation of electricity are more valuable than the integrity and ecological usefulness of the forests, as Europe and Nova Scotia, along with many others, are beginning to discover in their promotion of bioenergy. Meanwhile there are other forms of biomass generation of electricity that are ecologically sustainable and tremendously helpful in many communities even though these projects may not give a large return on private investments.

Abstracting and distorting phenomena to their analytic and economic 'object-side', has its basis in a more fundamental problem. This tendency highlights a fundamental antinomy that has been inherent in Enlightenment thought from the beginning. Human control over nature, including human nature eventually turns against itself. We could call it control run rampant (Smith, 2015a); objectifying all creatures and resources in order to exploit them. Subjects end up objectifying and controlling their own selves (Sherman, 2007; Smith, 2015a). That raises the question of who will do the controlling. B.F. Skinner (1948) in his *Walden Two* took this antinomy to its ultimate conclusion, the behaviorist seeking and submitting himself to reinforcing behavioral conditioning. This approach speaks to human pride; humans not accepting any 'boundaries' to their investigation and control. It reminds one of Walt Disney's *The Sorcerer's Apprentice*, based on Goethe's poem: technique run amuck. However, the question is not one of accepting 'boundaries' or limits, but rather of recognizing and respecting the nature of the other *as subjects in their own right* (De Graaff, 2016; Smith, 2015e; Zuidervaart, 2007). The subject-object relation is a distortion that results in a fundamental antinomy, in which humans ultimately turn on themselves and violate all other creatures.

The alternative is a radical subject-subject or inter-subjective view of reality that honors the integrity or multi-dimensional unity of all phenomena (Smith, 2015a, 2015e; De Graaff, 2016). It requires a radical holistic approach to our 'use of nature', taking into account all dimensions and ecological inter-relationships (De Graaff, 2016). We need to learn again, especially in the global north and in all so-called 'emerging economies', and all those involved in capitalist enterprises that all creatures are subjects in their own right that play an indispensable role in the total ecological system. The way we view and deal with each other, all non-human creatures and the inorganic world determines our humanity or inhumanity. The latest undercover investigation of cruelty against animals in factory farming illustrate how workers in these factories are dehumanized and owners and investors are guilty of causing cruelty and suffering (Wells, 2016). It is just one of countless examples of the consequences of objectifying and reducing living creatures, including humans and all other phenomena to economic objects and efficient and technical procedures.

The way we provide for our needs, relate to each other and all other subjects, reveals our basic conviction about life. It either serves the well-being of all creatures or it serves the interests of the few at the expense of all others. *Peoples' worldviews* in the sense of a driving and motivating force, *practical and scientific knowledge* and *practice* form an integral whole and reinforce each other for better and for worse (De Graaff, 2016).