# A PHILOSOPHIC CONTRIBUTION TO THE ECOLOGICAL PUBLIC OPINION

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## Abstract

This article demonstrates that the cultural layer of public opinion on environment is based, basically in theology and in political philosophy. However, postmodernist culture has engendered an environmentalist paradigm with new properties inspired by biocentrism (conservation, contamination, extinction) in consumption (recycling, reforestation), a perspective of relativism and a hermeneutic view of mass media´s information. The aim of this essay is to evaluate whether public opinion processes may vary from the norm when new social discourses are studied. From the new findings we have assumed that, currently, public discourse on the environment is easily assimilable through its proximity to other ideological discourses.

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## Introduction: Eco-ideo-logy, Nature and Culture

The aim of this text is to explore the construction of nature's (and man's) identity from the view-point of cultural studies. For this to be done, ecology will be understood as a web of meanings that make references to man's relationship with his surroundings. Ecological culture is emerging both on the political and academic agendas. The notion of culture is characterised by two aspects: symbolic forms and internalised mental structures and, on the other hand, externalities and everything that exists outside the individual and which has not been internalised (discourse, works of art, institutions, artefacts, objects, technologies, tales, monuments, etc.). Berger and Luckmann (1995, 83) also insists on the same scheme but with different names; the subjective meanings instilled in individuals and the externalities, in institutions. According to Geertz (1997), culture is presented as an internalisation of the *should be* of the roles and norms that stipulate a given social order; an order outside of the individual and designed collectively. From symbolic interactionism, culture becomes the internalisation of objectivised forms that are displayed in a universe of concepts created by the community.

We can talk of selective and hierarchical internalisation as a way of changing what is established, and of a reformulation of what culture is, although the irreductibility of the cultural, relative to the individual, cannot be overlooked either. Raymond Williams (1994, 31-52) also emphasises the way of life that expresses meanings and values not only in art, but through social institutions and the community's individual behaviour types.

Ecological culture is a set of internal subjectivities that produce an ideology: Dobson (1997, 61-84) talks of a new ideology for the 21st century. Its green political thought implies a reflection on ecologism (or social change), philosophical foundations (the Gaia Hypothesis), sustainable society (consumption, biotechnologies, needs), strategies for changing life-style (legislation, direct action, communities) and the spreading of ecologist ideology (on socialism and feminism).

In communication, studies on ideology and social practices are replacing the paradigm of limited effect or attention to audiences. If we consider social, material and historical determinants, the result is that it is the ideology of cultural production that stands out. The study of ecology should not demonstrate a separation between production and reception but, on the contrary, be open to textuality and meaning. The communication of ecologism is a phenomenon that surpasses the inter-personal, the professional media (journalism), and the institutional and corporate. In other words, the link between production and consumption introduces the notion of social stratum associated with the process of the meaning of messages. The purpose of the semiotic analysis is the same as that of the political analysis of consensus in the complex process of social construction and legitimisation. The media support the dominant social structures, reproduce them and sustain them, participating in the process of social training. In the semiotic process of the construction of social reality, spectators stop being passive and acquire the value of an active user of the production system. Nevertheless, the power available to the new spectators is not completely explained if we understand the communication whilst forgetting its natural characteristic to become an encoding/decoding process, replete with intentionality in the construction and incorporation of content. We cannot overlook the issues of domain, as we have to explain how modern society negotiates the

representation of social reality when, at one and the same time, it states that the media reproduce, reinforce and create new political and social values and institutional practices. The media carry out the function of the means of production and reproduction of the dominant ideologies. But neither can the dominant discourse of the mass media neglect the diffusion of subcultural media. The workers' press, trades union committees, residents' meetings and the student struggle have come together in agreeing on the building of nature's identity. Production is done within limits that condition decoding or reading. And that reading can be of several types. In the type of reading that dominates, the receiver accepts the view of the issuer. In negotiated reading, although the intentions of the communication are recognised, the issuer and the receiver do not share the same point-of-view. Lastly, there is oppositive reading in which, although the intentions of the communication are recognised, alternatives are sought by the two parties.

Dobson (1997, 21-34) emphasises the ideological difference between ecologism and environmentalism. Whereas ecologism is the evolution of erudite thought on nature, of its romantic reaction and the poor perspective of primitive industrialism, environmentalism would be flexible discourse that could be integrated into any current policy. Before continuing, we do agree with modern green politics being based on the realist awareness of the unsustainability of current political and economic practices and with the principle of equality, which sets out to bring down hierarchies in the natural order, including man.

Ecological ideology begins at the edges of the Earth. Demographic and economic growth is limited by natural resources. That is why wondering about ecology and nature is the same as wondering about one's own survival. Man's existence (material needs) and essence (rational freedom), which are the framework of man's life, have had the same common destiny since the Enlightenment.

The construction of a variety of discourses spread through mass culture (the culture of the mass media) has given a different meaning to man's relationship with nature. *The Society of the Spectacle*, as Debord (1999) calls it, is dragging imaginary Gaia into media scenarios. Nature is consumed in media simulations, re-creations, representations and texts; as if it were any other cultural consumer product. Life is mirrored or shown in a ghostlike fashion in display areas, with no secrets, no reservations (even though these are protected natural areas). Cinema and television screenings and ecological tourism, are cultural mediations for the public at large. Life is shown in the mass media and in natural parks in an organised way for the ease of the consumer. Trails for hikers, well-lit caves with entrance times, natural science museums and the amazing images provided by documentaries and magazine photographs; this is the way a technified society approaches nature. This technological mediation (or instrumentation) is the symbolic exploitation of nature. The environment does not escape simulation in the media, that is, subjective representation by the means of communication. The relationship between what is objective (nature) and what is subjective (culture) also extends to the notion of life from this relationship between surroundings (nature) and ecology (culture).

Culture, according to Althusser, is ideology; a set of ideas and judgements that attend to private and communal interests (in Ritzer 2001, 563). Ideologies always speak to whoever has vested interests. According to Léon Dion, the definition of ideology would consist of an explicit and generally-organised system of ideas and judgements for describing, explaining, interpreting, and justifying the situa-

tion of a group or collective which, taking broad inspiration from certain values, proposes a precise direction for the historical action of the said group or collective (in Rocher 2004, 394).

What Altner would seem to have expressed about new biology is the description of a new planet-wide ideology (in Goodwin 1998, 280). It is an ideological biosystem that will emerge as life's instrument for historical action. Ecology is thus placed on the same level as the society and the histories that have been lived; that is, society as we would wish it to be and as all social subjects make it, and the society that we experience and perceive. Ecologism is a means of influencing the history of societies. With regard to this last point, in this text we are going to stress time and time again the influence of all the speeches, texts and meanings which make up communication's ecological semiosis.

Altner provided a definition of biology which was closest to his perception of culture: "the prime obligation of human beings toward their fellow creatures does not derive from the existence of self-awareness, sensitivity to pain, or any special human achievement, but from the knowledge of the goodness of all creation, which communicates itself through the process of creation" (in Goodwin 1998, 280). Creativity is the nexus between the goodness of all creation and human life. Biology is not an artificially manipulated instrumentation of life, but a chance and indeterminate combination of a whole; of health and of quality of life from a perspective of all living beings. This perspective, which is full of qualities, consists of some bases regulated by the sustainability of between man and the rights of expression of nature itself. Altner summarised this in the following points (as summarised by Goodwin 1998, 281-282): (1) The histories of Mankind and Nature are linked by a common fate. This is why the consequences of scientific and technological development and progress need to be studied: a democratic debate needs to be started on these aspects in which critical participation can come from the public arena and opinion. (2) The possibilities of genetic modification are changing the historical value of life, as interference in (genetic) inheritance breaks with living beings' right to life. (3) According to Altner, the building of nature's identity stems from a recognition of nature's rights. For this, a critical examination of the function of animals and plants, both as a source of food, and as material for scientific experiments and consumption (in cosmetics and furs, for example) is required. (4) The right of nature consists of it being afforded the worth of "a third partner" alongside the working-class and capital. It implies nature being treated as "*an other*" which cannot be more or less freely disposed of. (5) The rights of the biosphere belong to a planetary policy which implies the acceptance of all legal, local, autonomous, national and international domains.

From the viewpoint of biology, Altner introduces variables which work in cultural analysis: the building of nature's identity from the viewpoint of political struggle and the domain of the symbolic (Goodwin 1998, 282). This claim is identical in manner to the feminist struggle for the recognition of women's identity. It is, therefore, not by chance that ecofeminism has arisen, although too many metaphorical theories have been written about this association of woman and nature. It was romantic misogyny that discovered the same irrational qualities of animals in women. Romanticism also introduces a new biocultural perspective; the naturalisation of woman signifies a step forward to the category of woman by the human species. The [woman/female] is a romantic notion that reduces her to a

timeless essence within the sequence of nature. The [woman/female] is more akin to a mare, bitch or cow than to man, whose similarity is accidental and merely morphological; given that the essence is radically different. Woman is represented by an animalism that turns her into an irrational being. Romantics reassert generic continuity and transform the feminine state into a philosophical object through the arguments of a reasonless woman. They deny all women the principle of individuation (contrary to modernity's individualistic current). The ontological resort is to transform [*all women*] into [*woman*].

Otherness is the male resort for showing his superiority. [*Woman*] is the process of manufacturing what is, in all absoluteness, some other. Absolute otherness is pre-political, irrational and mystical, with human appearance and natural anarchic power. Misogyny, or submissiveness to the male, is based on a range of moral and intellectual and, in this case, biological suppositions, with pseudo-scientific postulations that come from philosophy and even from the small advances of an experimental science, psychology.

Biology also involves the association of woman and nature from the viewpoint of motherhood: Maori women bury their placentas in the ground to demonstrate their links with the Earth due to the significance of fertility (the origin of life).

Whilst man dominates nature, woman is reconciled with it. Ecofeminism would consist of the recognition of nature's identity, its acceptance, and reconciliation for the hurt it has been caused. The ecofeminist culture is one of sustainability, not one of consumerism and wastefulness. The fight against the patriarchy, which entails the devaluation of the environment, begins with woman's power to control her own motherhood. Man's sexual dominance over woman, to freely dispose of natural resources, has led to demographic development that the planet cannot sustain. For this reason, the freeing of woman from her sexual contract is also the freeing of nature.

Womanlike qualities imply connotations for the understanding of ecologism that could be summarised as follows: (1) the giving of life; (2) the source of life and sustainability; (3) the defence of future generations; (4) breaking with the structures of man's dominance and the patriarchy; (5) a move from a passive attitude to active demands for rights; (6) a search for the essence of being.

Should these thoughts be fair metaphors for understanding what a lack of identity signifies, and, thence, the lack of human consideration for other living beings, the feminist struggle for the rights of women would not be human; nor would be the struggle for animals and plants, and this would be the case of other individuals who lack identity and recognition in our world for reasons of nationality, religion, race, ethnicity, or sexual orientation (immigrants, diasporas, indigenous populations). And yet, though this may not be a human claim, it is, nonetheless, a biological one, and this is what the ecological spirit would seem to express: over and above the human aspect (anthropocentrism) is, simply, life (biocentrism).

## Biocentrism, Cosmogenesis and Complexity

This biocentrism has a number of semantic sources that imbue it with sense in contemporary culture. The way Teilhard de Chardin's idea (1967, 69-130) of evolution has evolved helps us to understand how we have arrived at biocentrism. The consolidation of the idea of zoological evolution focused around man and hominisa-

tion can be interpreted in different ways: (1) The idea of transformism has moved on from metaphysical impregnation to phenomenological scientific conception. The experimental universe is always in process, everything, including Everything, is born, becomes established, and goes through successive stages. (2) Evolution is no longer a hypothesis nor a simple method; what it presents is a new dimension that affects all elements as a whole and relationships with the Universe. It is not a hypothesis; but a condition which all hypotheses must satisfy. Chardin (in Riaza 1968, 78-80) said that we have advanced from the state of the Cosmos to the state of Cosmogenesis. (3) Finally, the idea of evolution has become universal to the point that interest has solely revolved around man and hominisation. According to Darwin, Man, instead of being an observer of evolution, became a part of it; but from Man's inclusion in the evolutionary chain, he has come to constitute Biogenesis. This means that Man is becoming aware of the fact that he is the main factor in the existence of life on Earth. Given the wide variety that chance has produced in life in all its senses, Man, from his privileged position in our Universe, is also a growing value of awareness of life in our world.

Man and his activity on the planet really do affect the evolution of life. This has been demonstrated by all the errors of industrialism. Chardin (1967) introduces this as a factor for movement rather than as one of stability through the use of a combination of intervening forces (science/knowledge) and socialisation (politics/ideologies). Leonard Boff (2002) points in the same direction; the changes that we make to nature have two clear consequences for the possibility of life; the survival of present and future generations and the distribution of wealth (or the opportunity for others to gain happiness). For ecological thinking, it is easier to approach the cognitive side of the natural phenomenon. Knowledge is required if the survival of the generations is to be guaranteed from life's prognosis and diagnosis for attaining a balanced ecosystem. And it is, moreover, necessary to address issues pertaining to the sustainability and consumption of natural resources, that is, we must know what the limits of the positive exploitation of the Earth's natural riches are.

To be specific, social movements are going in three directions: social cohesion (consensus on our surroundings), sustainability (social equality) and coexistence (cultural diversity). We agree with Dobson (1997, 155-223) with regard to the socio-political values that society is regaining from the main features of the natural world.

Ecologism is not a flexible discourse like environmentalism which can be practised from within any ideology (liberalism, socialism or anarchism). Ecologism evolves from anthropocentrism to biocentrism, where demands are similar to other cultural confrontations. For ecologism, equality within cultural diversity (of race, ethnicity, religion or sexual orientation) is born out of the condition of life: all forms of life have rights. This defence of forms of equality can be appraised as a left-wing policy but it would be risky to consider that all Marxist tradition is ecologist because it has always maintained that the natural world is outside of man and there for him to command and benefit from. On the contrary, it might be thought that ecologists' spirit for conserving (conservatism) is right-wing, as they uphold that we should respect the order of the natural world as it has been previously ordained, in other words, they show a profound respect for tradition. This dialectic between manipulation (and change) and perpetuity (or the continuity of the same order) can

be seen to have been reflected in the Bern Resolution in which both the Rights of Mankind and the Rights of Nature figure. Prominence is given to the importance of both the right of the unborn and future generations to life, and of respect shown to their individual genetic inheritance (not artificially manipulated by man), to their wealth of genetic diversity (of animal and plant species) and to the conditions of the quality of life (water, air and atmospheric temperature). Finally, it emphasises the rights of the community of all living beings through respect for preservation and development, the conservation of their ecosystems, and the networks of species and populations, the right to their genetic inheritance, the quality of life signified by growing up and reproducing in their own proper ecosystems, and, in all cases, making use of natural resources only with prior justification. The novel contribution is that nature acquires the legal condition of a body corporate.

Theories, methods, and opinions have been formed around ecology as a set of values and judgements that ultimately define a paradigm shared by individuals that make up societies, by consolidating a system that allows them to organise the rules for relationships in society and take guidance. The core idea of its first exponent, Ernst Haeckel (1834-1919), does not differ much from the modern notion: ecology would be a study of the inter-retro-relationships of all living and non-living systems with each other and with their environment. The concept of study of the relationship of living beings (interaction and mutual relationship) was clarified by Jen Baggesen (1800) and Jakob von Uexküll (1864-1944). Using biological discourse, they insisted that the study was neither of isolated living beings nor of the environment was necessary, but that what was necessary was the study of the Environment as a whole. Terms such as biotope and biocoenosis stressed the importance of the equilibrium that the various forms of life achieve in their existence.

Ecology is dialectic equilibrium between [solidarity/antagonism], [cooperation/chaos], [diversity/totality], [complexity/interiority]. For this reason, it is also biocommunication, the interaction of messages; no longer just between [men/women] but between all the representatives of the community of the living. The Theory of Gaia as developed by Lovelock (1995) puts great store by this idea of interaction and an interdependency relationship between the existence of the individual and the existence of organisms. Life is no longer an isolated object, but a phenomenon on a planetary scale. On this level, the system is eternal and does not require reproduction (it is self-reproducing). Living organisms cannot only partially occupy a planet. The ordering of the environment requires a sufficient number of living beings. Lovelock concludes that if occupation is only partial, then it is impossible for the physical-chemical forces that make the ecosystem inhabitable to evolve. This thesis on the need for the system's internal equilibrium was inspired by Erwin Schrödinger's reflection (1998) that the life-system's most important property is its ability to move upwards, through the counterflow of time. Paradoxically, life controverts the second law of thermodynamics that states that everything is moving downwards or towards equilibrium and death. And yet, life evolves towards the greatest degree of complexity and continually towards improbability. This is the great novelty that ecological thinking introduces. Although science advances by isolating objects and studying them separately from their surroundings, using a method of simplification, ecologism studies an object's relationships in the complexity of its environment. For Darwin (1992), nature is no more than a simplistic

hierarchy of isolated objects subject to the rules of natural selection and yet, on the other hand, for complex thinking, the close relationship between life and its environment means three things. The first is that living beings also grow by exploiting all the possibilities that their environment has to offer. The second is that all living beings change their physical and chemical surroundings; and the third is that the limits of life are the limits of nature (unhealthy water, polluted air, concentrations of contaminants). Both Schrödinger through neguentropy and Ludwig Boltzmann through his formulation of the second law $S=k\ (lnP)$ expressed the idea that the more improbable a thing is, the smaller is its entropy (Lovelock 1995, 36-37). They thus explained that life, with all its improbability, has reduced entropy. Entropy is an ecological concept, if it is understood as a notion whose sense arises out of the strength of the connection. This is a thermodynamic or physical term that relates to energy and time, and that connects life's processes with the basic laws of the universe. For Lovelock (1995), life is not only defined scientifically by thermodynamics but also by molecular biology (the study of genetic information) and physiology (the holistic study of living systems).

Complexity is life's new paradigm. It allows the reality of life to be captured through the inter-retro-relationship, which it observes from order to disorder in the interdependence of all things. The organisation of life is also antagonism, contradiction and competition.

When Lovelock (1995) introduces the Gaia Theory, he accepts the change in the complex Darwinist paradigm according to which the growth of an organism does not solely depend on its ability to adapt, but on how it affects its physical and chemical surroundings. Theoretical ecology has broadened out. And it is, moreover, a scientific paradigm that relates not only to the knowledge of life, but it is also a theory that explains how societies work (Luhmann 1997), communication (Shannon and Weaver 1980), religion (Buddhism / Capra 1987) and even art (Thoreau 2007). The complex logic takes in the whole philosophical tradition that begins with Plato's cosmogony, and all of Teilhard Chardin (Riaza 1968, 78), for whom life is a phenomenon that can be observed from totality. The whole is what has priority and nothing in the world can be understood if it is not the whole and on the basis of the whole. For Chardin, ecology encompasses the cosmic whole and the earthly whole and, within the latter, he would place the Biosphere, the Noosphere and the whole Omega, driver of all universal groups (Riaza 1968, 409). And what is the "whole?" The Whole is matter, life, energy, consciousness and the world. The whole is greater than the sum of the parts of which it is made up. Totality, unity and dynamism would be the properties of life. Chardin puts forward useful principles for understanding what modern ecology means, and we cannot forget that his Cosmogenesis is expressed in metaphysical-experiential and scientific terms. Despite his insistence in seeing the world as unchangeable and irreversible, he is also an evolutionist who manages to understand that the consistency of the world depends on the consolidation of complexification. As Riaza (1968, 78-79) points out, the consistency of the world would not only consist of the effect of matter, but of convergence. Ecology will be consistency and evolution at the same time. Consistency develops through complexity which, for Chardin arises in the spirit, but which for us is simply the balance of the universe (cosmic, experiential and material). Convergence is the progressive joining together of the manifold. And according to Riaza, the convergence in Chardin (Riaza 1968, 79) is ontological, as it

combines spatial unification (the forming of centres that combine more elements); unification in time (or irreversibility) and psychical unification (or immanence). Chardin said "more being=more unification." In current times, this unification, described in metaphysical terms, is direct proof of chemical and genetic tests of the common ancestry of all living organisms (the same intuition as Darwin had).

## Growth, Reproduction and Communication

Much has been written by biologists about the origin of life and its subsequent development. Perhaps the nearest to the complex relationships system is Lynn Margulis' book published under the title of *Symbiosis in Cell Evolution* (1981). The start of multi-cellular life comes from the parasitic infestation of one cell by another. The eukaryotic revolution involves a relationship which is one of competition at the beginning, but which later turns into one of cooperation. Life does not move forward by variation and selection alone, but through symbiosis (an inter-intra-relationship) that allows for evolution and which permits it to be understood that the biosphere is an organism that has self-regulating mechanisms and also a wide variety of bio-geo-chemical cycles. In this regard, Smolin states that the mere existence of a living world requires that this be a single self-regulating entity, and the only way such surprising complexity and novelty can arise is through random variation and natural selection (1996, 270-285).

For Monod (2000), biology holds other problems. The origin of present-day organisms has three more-or-less well-defined stages: (1) the forming of the chemical elements that are essential for living organisms (nucleotides and amino acids) in the Earth; (2) the forming of the first macro-molecules capable of replication from these materials; and (3) evolution. The last-mentioned has created a teleonomic apparatus around these replicating structures until a complete primitive cell was formed. It can be said that this process has allowed life to be stable through the replicational invariance of DNA and for the teleonomic consistency of organisms to be understood. Thus Monod (2000, 123-140) believes that it is evolution that is the central issue in the study of life. It is this that requires the most study and the greatest accuracy. The challenge to all global intuitive representation is the complexity of living systems, and not, precisely, the elementary interactions (and their mechanist character) on which these systems are based.

Life is consistent, but at the same time shows itself to be unstable, haphazard, and ephemeral; these are the ramifications of a modern theory that concludes that two important properties can be found in all living beings: invariance and teleonomy. The appearance, evolution, and progressive refinement of structures which are increasingly more teleonomic, are produced because of disruption that might occur to a structure that already possesses the property of invariance. Invariance, by necessity, precedes teleonomy. Invariance has existed in western thinking from Plato and Heraclitus to Marx and Hegel (Copleston 2000). Absolute reality can be found in immutable forms, which are unvarying in essence. To the contrary, other thinkers have seen this same reality in movement and evolution. The strategy of science has always been the discovery of these invariants. This is not incompatible with another idea which supposes that any occurrence, phenomenon or fact involves interactions that by themselves create transformations in the system's elements. The identity of life, its construction, has traditionally gone in two direc-

tions in our rational world: the positive interpretation from our (political/social) right which treats our nature and its living organisms, ecosystems and elements like subjects, and, in the other direction, the symbolic treatment that allows communication between man and his surroundings. Classical science made no advances in the principle of identity, quite the contrary to modern physics in which fundamental postulations seek absolute identities represented by two atoms in the same quantum state. On the quantum scale, at least, science expresses a substantial reality, that is, it possesses another way of representing reality based on a search for invariants in the diversity of nature's singular phenomena. The invariants are chemical, anatomical, and genetic. The quantum disruption experienced by human beings leads to a host of accidental problems in translation that result in ageing and death. These disruptions have divided scientific thinking between those whose opinions coincided with Einstein in that "God does not play with dice," and those who have accepted the principle of uncertainty.

The life system has been interpreted in two well-defined ways. If the ecosystem is understood in keeping with what the philosopher Bergson thought, nature is an absolute force whose sole purpose is the creation of itself and to be an environment for other creations. For Chardin, evolution and growth are a programme of the Universe itself which is carried out as a revelation of nature's thitherto unexpressed true intentions. In this way, life emerges out of the font of the unforeseeable and essential and is, therefore, a generator of absolute novelty. Disruptions to the living beings' replicatory structures originate appearance, growth and evolution. This is what differentiates them from a dead system and gives it total creative freedom.

To conclude, evolution is not a property of living beings, but the result of their imperfections as a mechanism for conservation, a privilege that is maintained, unlike in other systems.

## From (Bio)logical Evolution to (Ideo)logical Evolution in Public Space

As Boff (2001; 2002) so well observed, non-linear logic and the paradigm of complexity are points-of-view that acquire the status of cosmovision. Ecology is not limited to a few judgements and values relating to the environment, but is a political doctrine, a social project, a scientific paradigm or the spirit of a new religion (or the regaining of religious traditions). The evolution of evolution is a new lens through which to look at what surrounds us. The complexity of the observer, who observes, is observed and self-observed, as in a sketch by Maurits Cornelis Escher (Ernst 2007).

From this holographic vision, in which the parts are present in the whole and the whole is present in all the parts, emerges Leonardo Boff's (2001) fourfold typology of ecologies:

(1) Environmental ecology, which deals with the environment for the conservation of its natural future, the quality of life and the preservation of species threatened with extinction. Environmental ecology is the reconciliation of man with nature that has misunderstood progress due to mistaken technological and industrial development. It seeks new, less polluting technologies, favouring technical solutions. And yet the destruction of parts of the biosphere signifies the non-viability of every principle of life.

(2) social ecology does not only embrace the environment, but its object is the Environment as a whole. It concerns the integration of human beings and their society in nature ("Chico Méndez's dream"). New urban policies that improve the aesthetics of our cities and our leisure places (the countryside, mountains, beaches, parks and gardens) are not enough for this, but social ecology implies the acceptance of political solidarity which extends social rights to those who coexist with us: through education, health services, social justice, rights with no racial, ethnic, gender, religious or sexual orientation discrimination. Man is considered to be a unit of the natural structure. Social ecology supports sustainable development, which takes into account all the failings of our generation without sacrificing our planet's natural capital. As Hans Jonas (1995) also states, we should consider future generations' needs for an environment that guarantees their quality of life. This shared concern arises out of the extension of man's responsibility to the biosphere, given that the power which his technological development gives him, conditions the future survival of the human species itself: and so responsibility extends from the *being* as an individual to *being* in general.

(3) Mental ecology, also known as deep ecology, upholds the development of biocentrism, as opposed to anthropocentrism, as a new ideology. Anthropocentrism originated in religion and portrays nature as something offered by God to men for their happiness. Boff's biocentrism professes a biospheric egalitarianism from the viewpoint of religion in which man and all other animals have the same rights. According to Bookchin (1978), the first objective of biospheric democracy is the Earth, the first nature was "pre-human" and the second nature was "mankind." For Boff (2001), mental ecology revives cosmic solidarity wherein all beings are interdependent and live in a complex network of relationships. They all have the same importance. For this he distinguishes two roads to success in the implementation of this ideology: feminisation, which compares sensitivity to the mystery of life and a return to the religious (or sacred): the sacred also imposes limits on the manipulation of the world since it evokes veneration and respect which are fundamental for the Earth to be saved. It creates the ability to once again link all things back to their source of creation, which is the Creator and Ordainer of the Universe. All religions are born of this ability to re-associate. What we need today is to revitalise religions in order that they might fulfil their job as a re-linker.

(4) Finally, integral ecology is the new vision of the world that astronauts have introduced since the nineteen-sixties, when they saw the Earth from the outside. The planet, men and its living beings were seen as a single entity. Cosmologists have also demonstrated that life on Earth is just one part of a universe that is in continual cosmogenesis. This is an integrated process that also involves humankind in a process of anthropogenesis, formation and birth.

For Boff (2002, 38-43), three great issues emerged from anthropogenesis: (1) complexity/differentiation: the more complex systems are, the greater the capacity for self-organisation they possess, which, moreover, better empowers them to differentiate themselves from all others, as is the case of the human being; (2) self-organisation/awareness: complexity allows man more conscious relationships with the world that he is surrounded by; (3) the re-linking/relationship of everything with everything else leads to the singularity of the universe in an organic, dynamic, diverse, tense and harmonic whole.

Guattari (1996, 8) also established an ecosophy typology which was the evolution of the notion of ecology from the dominant technocratic perspective to its ethical-political linkage. He distinguishes three ecological concepts within this ecosophy: the environment, social relations and subjectivity. For Guattari (1996, 17), nature, like the rest of the human world, is lived superficially: ways of life evolve progressively towards deterioration. Nature has always been appealing for the media and cultural production. Literature, art, photography, publications, the cinema and television have been rewarded for their creative efforts in supplying an audience that consumed their media discourse. Television news programmes have broadcast spectacular fires and man's irrational violence in capturing species that are becoming extinct. Every year, water (or drought) and the very survival of man (floods, typhoons, hurricanes) fill news stories. In news terms, nature is a media agenda topic that appears in the news or in the culture industries' fiction on a daily basis. On the basis of subjective conservatism, our societies seem to construct life's discourse on the basics of world capitalism. The global media set out global ecological problems, that is, issues of international (or transnational) politics that once more revive the paradigm of planetary ethics or, to put it another way, the need for agreement between the widely differing cultures that inhabit our world. On this occasion, pollution of the atmosphere, the extermination of biodiversity, the appearance of planet-wide illnesses and diseases (AIDS), advances in genetics, the irrational exploitation of natural sources, the value of life, the different ways humans die (war, hunger, epidemics, poverty, hate) are all compelling reasons, for our own survival. Communication is a semiotic process; it is the action that results from the feeling which the stimuli of our surroundings produce in us. Nature is a semiotic process that envelops man and continually transmits meanings that cause reasonable actions, emotional reactions, direct conduct and behaviour, affect attitude, impact on our very being and existence. Nature is the same phenomenon; it is communication, since subject and object cannot be separated from each other. The observer cannot observe, because he is part of what is being observed, unless he turns in on himself in a simulation, in the re-creation of signs that remit to objects that are real. Guattari (1996, 42-43) differentiated between four semiotic regimes acting as a base of world capitalism which condemns nature to death: (1) economic semiotics (banks, shareholders, accountants, foreign debt, etc.); (2) legal semiotics (property deeds, legislation and sundry regulations); (3) technical and scientific semiotics (programmes, studies, research, universities, learning centres); (4) the semiotics of subjectivisation, which are the same as the foregoing, but to which more should be added, such as architecture, urban development, the cinema, television, design, fashion, or style.

Unlike man in traditional society, man in technological society consumes the representation of nature, because he has already lost the ability to coexist directly with his own reality. This is an unnecessary, inconvenient and useless risk. So he cannot experience it ("live" it really), but yet, he can interpret it through the subjectivity that all cultural mediation produces. This is the benefit which pleasure, convenience and use offer. The need for irrational exploitation to satisfy human needs has made everything too transparent and imperious. Guattari (1996, 45) also explicitly recognises that the models that were attempting to institute a causal hierarchy between the different semiotic regimes are losing contact with reality

and that the goal of capitalism is to create an indivisible production-economics-subject structure.

Guattari's thesis (1996, 45)firstly supports the existence of a social ecosophy aimed at generating specific new practices which change and reinvent types of coexistence within families, couples, citizenry, work places, etc., ending racism, sexism and urban disasters and for the pedagogy of its social mediators to emerge in the market system. Its goal is the reconstruction of types of [being-in-a-group]. The means to these ends are not only via communication, but also through existential changes whose objective is the essence of subjectivity.

Secondly, mental ecosophy is a new approach to the subject's relationship with his body that condenses the finiteness of time, or one's own conception of life and death. This ecosophy consists of the search for resources that protect against the standardisation of the media and telematics, conformism with fashions, or manipulation of opinion through advertising and political media.

Finally, the ecosophy of subjectivity is related to the foregoing. The subject is not evident. In a world of mass media, it is impossible to have thinking as a starting point. Guattari (1996, 56) explains that many other types of existence are created outside of consciousness in such a way that, when one's own thinking process is comprehended by oneself, it impedes the incorporation of any other possible real territory of existence which are all related with one another. For this reason he thinks it is fairer to speak of the components of subjectivisation which each work in their own way, forcing us to review the relationship between subject and subjectivity. The vectors of subjectivisation involve human groups, socio-economic assemblages, computers, public entities (just as Boff stated, although he expressed it in a different way). The interiority of the subject does not transcend the individual and is created through the intersection of a multitude of discordant components.

For Guattari (1996), degradation is not exclusive to the environment, but includes other domains of reality, such as the social and psychological ones, and the subjective (or communication). This is why he defends an ethical aesthetic that does not separate culture from nature through the cross-thought of interactions between ecosystems, the mechanosphere, and the Universe, in both social and individual types (e.g., child labourers, women's emancipation). Ecological praxes would make use of all potential vectors of subjectivisation and singularisation. The problem for Guattari (1996, 52) is that these vectors have been stripped of their functions of reference and meaning and so act like disembodied existential materials. Ecology should abandon the image of a group of nature-lovers and should aim to question the assemblage of subjectivity and the formations of the powers of exacerbated capitalism (for which there is no guarantee that it will continue to triumph).

Morin (1998, 33-65) also points the triumph of ecologist thinking in the direction of recovering the subjectivity of the environment, psychology, things social and everything which exists and has ties with reality. His theory on Oikos, a Greek term which defines inhabited land, is the beginning for establishing the meaning of ecology: the relationships between living beings and the environments in which they live. He considers the following elements to be essential for this: (1) Umwelt (environmental world); (2) Biotope (the geophysical environment); (3) Biocoenosis (all the interactions between living beings that inhabit the biotope). Life possesses three organisational facets: (1) the species (reproduction); (2) the individual (or-

ganism); (3) eco-organisation (previously surroundings). Perhaps Morin's unique concept, which connects with the need to get back to a more ideal subjective regime in the current world, is eco-organisation, or all the interactions at the heart of a determinable geophysical unit that contains a range of living populations that make up a complex unit of an organisational nature or system. It is a spontaneous system that is created on the bases of geophysics and genetically-determined beings.

## Conclusion

We wished to end with this article's core idea on ecology. Unlike the widespread idea of environmental science, ecology is open to all sciences – knowledge, myths and beliefs – with the final goal of constructing a new social subjectivity. Life does not depend in an isolated manner on the new technologies, the technosphere and the mechanosphere, nor on respectful urban planning and sustainable development, but on the biospheric awareness of unity.

Compared to the dialectic logic that governs any community, creative thought or communications system, we can address change to dialogic or perikoretic logic. Even the logic of complementarity and reciprocity (School of Copenhagen) extends dialectic logic. Opposites have their rights assured and this works despite differences of sex, ideology and belief, and so the various ecosystems are appreciated. Despite this, a dialogic logic would open the circularity of all possible relationships and all possible beings. It is necessary to find an inclusive attitude that produces fewer victims. This is what Guattari (1996), Morin (1984; 1998) and Boff (2002) have all tried to demonstrate, the need for integrated, circular, inclusive and dialogic ethics with all organisms composing the same unit which can be seen from space when looking at the Earth.

However, it is not necessary to create a new code or representation that goes beyond human possibilities, either. Subjectivity can create sense on a simple presupposition: the existence of mankind in an acceptable nature. The ecology we have shown sets out an initial premise: "what must be, must be and must be with regard to man," as he cannot forget his ontological side, above all in the face of sacrifices and victims which he will, by necessity, pull along with him in his precarious survival. On the other hand, we all know that nature has limits to its tolerance and that it is incapable of putting up with intensified aggression. The production of food to feed a growing world population, raw mineral reserves, (renewable and non-renewable) energy sources and the difficult warming issue, are all part of the new ecological subjectivity. Other issues open up new meanings for understanding life on our planet, such as the plundering of biological knowledge. Khor (2003) denounces the inherent conflict between the knowledge system and the way it is protected and used, creating greater disintegration of indigenous populations' and local cultures' community values and practices. There may be divisions between local (or indigenous) communities if an individual is given the property of particular knowledge or innovation. It is even contrary to the very essence of spirituality of certain local (indigenous) cultures, for which all creation is sacred. The genetic patterns of living organisms will lead to the improper appropriation of traditional medicinal plants and seeds, as well as of our traditional local (indigenous) knowledge regarding health, agriculture and the conservation of biodiversity. Shiva (2005) also insists on the fact that food security will be undermined given that the diversity

and agricultural production, on which some communities depend, will be eroded and come under the control of individual, private, or foreign interests.

Ecology also counteracts the danger to non-delimitable risk societies; societies in which dangers are worldwide or globalised; technocratic societies where the traditional relationship between laboratory analysis and practical application has been reversed, since production (the economic factor) almost always takes precedence over research. Finally, societies are governed by the bio-power which justifies the hybridisation of what is natural and what is artificial, because everything can be characterised as "objects" (built), functional (useful), and, especially, "systematic" (interrelated). Ecology is the subjectivity that responds to the increase in the objective complexity of the universe of sciences and technologies, due to the intertwining of both philosophies, techno-scientific information revolutions and the molecular biological revolution which give a new meaning to the artificial environment. These, in total, produce (biological) machines. It is semiotics that denounces the fact that living beings are mechanised by the genetic genius, that the artificial environment is becoming immaterial (information networks, cyberspace, virtual reality, etc.), that ambivalence towards the sciences and technologies has been growing (with the intention of forming an opinion).

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