

## Unfurling Western Notions of Nature and Amerindian Alternatives

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### 1. Summary<sup>1</sup>

This essay is an overview of the notion of *nature* within Western tradition. It explores in a diachronic view the heterogeneity of connotations given to this term in a few historical periods (from Ancient Greece-Rome through Middle Age, Enlightenment and currently). The diverse treatment given to nature as a concept constitutes a good example of the socio-ecological risks implied when ecological notions that trigger behaviors are extrapolated worldwide as if they were standard ones. Contrary, this essay supports the existence of a remarkably diverse range of Western perspectives that have been defined as nature and could contribute to improve current environmental ethics.

### 2. Introduction

Diversity sustains life. Unfortunately humans have just realized that recently. Historical records all over the world and among different traditions register the emphasis of a set of constant attempts to homogenize notions. A meaningful example are Western notions of nature and society, unfolding opposed, symmetrical and somehow conflicting epistemes to the extreme of generating two broad parallel domains, natural vs. social. Much has been written about this dichotomy since at least the late 1970, some authors emphasizing its usefulness while others its unreal character. In academic and popular contexts for instance, it was commonly emphasized the multi-scalar, dynamic and stable character of natural systems in permanent equilibrium and homeostasis, contrasting drastically with the unstable imponderable des-equilibrated and destructive immanence of social systems. Therefore it was impossible to generate human laws. Natural laws instead were commonly established and held as bastions to construct Western worldview, i.e. gravity, evolution, matter, etc. Nature-society concepts subsume dual Cartesian conceptions that in turn embrace as their focus objective (natural) vs. subjective (cultural) realms. This apparently theoretical intellectual exercise is a historical contingent and has practical changeable implications, now nature “shifted from being a resource to become a highly contested topic” (Latour 2009:2). Nature and society are concepts strongly influenced by those (political) systems that reify them as truthful and allows the continuity of its (economic) goals. Such concepts are not universal; rather they are culturally built. An unavoidably call for

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<sup>1</sup> The Ethics and Climate Change in Asia and the Pacific (ECCAP) Project Working Group 2 is focusing on producing an ethical repository of world views of nature. This exercise is to examine whether there are indeed universal foundations underneath the external and superficial coating of differences or whether there are indeed irreconcilable perspectives that lead to different worldviews and approaches to ethics and issues of concerns in different civilizations. It follows up the working Group 1 report on *Universalism and Ethical Views of Nature* (Rai, et al. 2011). We invite scholars from different schools of thought, communities and traditions, to provide a summary of Views of Nature from other communities, with historical references following a general structure to allow readers to compare different traditions for common views of nature. See [www.unescobkk.org/rushsap](http://www.unescobkk.org/rushsap)

recognizing the weight of concepts in decision making or policies implementations in socio-ecological systems is compulsory now for the survival of life on earth. It is beyond the goal of this essay to present a synthetic and coherent historical view of this complex topic. Rather, an exemplified reflection of the multiple conceptions that through the centuries have been conceived to define and act on *nature* is offered here. The amount of written and graphic material of the definition of nature is overwhelming and no doubt many important ideas were excluded here. I apologize for the omissions, being my only purpose to instill thoughts in the reader about the similar and different perspectives to think and live on current earth, to believe in the possibility of aggregate environmental ethics from dissimilar spaces and times. Ethics is treated here in its etymological sense, from Greek ἦθος character or costume which in turn derivates from ethos meaning disposition, attitude or life philosophy of a specific culture or human group.

Doubtless there are many ways to approach nature in the different traditions recorded. Nature can be seen from many focuses: scientific, teleological, theological, religious or even from values that include or exclude humans. The approach here is a mixture of three implicit parameters. First, it is considered *a priori* that the notion of nature exists in different and diverse traditions which allow us analogical comparisons. Second, it is more accurate to talk in plural about conceptions of nature informed minimally by three sources: *pragmatics* (acted upon in diverse historical and social periods recognizing differences among literary and non literary people, specialists and non specialists, etc.), *reflexive* (abstraction of the term, definitions, explicit treatments of nature contingent to a temporal, social, cultural context) and *diagonal* (influence of the two former ones that percolates to popular culture). Third, a permanent counterpoint among different notions is observed, on the one hand sensual and perceptually apprehended notions and those abstract ones that attempt to explain the surrounded reality without physical or human referents and on the other hand among teleological secular and non secular concepts and non teleological notions in all times and traditions touched in this text. Understanding the notion of nature opens a window to comprehend environmental ethics at any historical and cultural moment.

A second albeit short section provides the basic elements of an alternative perspective held by many Amerindian peoples today which proclaims pragmatically and theoretically the utopia of dividing natural and social spheres. Indigenous languages do not have terms that translate nature and society, given that Amerindian *ethos* conceive reality as a global *continuum* where many actors (stars, humans, animals, plants, etc.) are organisms and persons, objects and subjects (cf. Ingold 1991), thus they have agency, morality and responsibility in the production and reproduction of life. This biosphere continuum as extant currently among the Jodí Indians from Sierra Maigualida, in the Amazonas and Bolívar states of Venezuela would be described in Zent (2012).

### **3. Outline of *nature* in Western tradition: invention or evolution of a theory?**

A brief diachronic synthesis of the conception of nature in Western tradition is offered here. Unavoidable this essay just scratches the surface of a complex and encompassing idea that has shaped a lifestyle. Two connotations are explicitly avoided here: (1) the notion of nature coming from physical science; and (2) the geopolitical implication of power supremacy given to the term Western. Nature here is restricted to the *biological* connotation whereas Western refers to the conglomeration of European and American nations that have inherited Greco-Roman, Christian and Enlightenment traditions. Indeed, included as Western are the many ancient traditions

subsumed and absorbed by Greco-Roman-Christian processes of colonization and transformations, prominent among them are the Germanic, Egyptian, Asia Minor and Jew worldviews and practices. In this sense, the term Western is a heuristic device that overtly recognizes limitations. Nevertheless as has been stated, the study of nature is a distinctive feature of Western culture (Westfall 1992:63) from Ancient Greece to the Middle Age, Enlightenment and Contemporary evolutionist ideas.

### 3.1. Ancient Greece

It is impossible to summon a single definition of nature in Ancient Greece given the enormous amount of thinkers, philosophical schools and ethnicities from diverse and often times polemical records (Torrance 1992:v; Lloyd 1992:2; Bargatzky & Kuschel 1994:6). Precisely contrary notions of nature support the hypothesis of an invention of such a concept, loaded with contradictions and discrepancies (Lloyd 1992:3). Moreover, translations of Greek ideas are often immersed in metaphysical or religious contexts. Current scientific notions of nature show a strong influence of those explored more than two thousand years ago by Greek thinkers. According to some authors, Greek notions of nature are the fundamental principles upon which *natural* science rests, furthermore, it encapsulates the potential of science: to reach certain intelligibility of the cosmos (Lloyd 1992:1; Crombie 2003:1). The word nature derives from Latin *natura* (a derivation of the verb *nasci* born) which in turn is a translation of the Greek *physis* (*φύσις physis*). Nature appears as a Greek and Roman deity to being today an elusive and resilient concept. Originally Physis is the prothogenic goddess that embodies life, is an entity with breath, animus, spirit, volition and morality. Physis is hypostatic, similar to other initial gods as Eros or Thesis since they were the firsts in being born to generate diverse life-forms. Antique hymns and songs represent physis as unmanageable, a link between sky and earth, deeply wise, simultaneously ethereal and mundane, holder of life, whom governs the universe and recreate its substance (after the chaos generated by the war between Zeus and Typhoon). Physis does not have mother or father since she generated herself with the breath of life when the atoms combined fourth times air, water, earth and fire (<http://www.theoi.com/Protogenos/Physis.html> checked on June25 2007).

Both physis and nature refer to everything that is born, develops and potentially disappear or transform. Physis grows quantitative and qualitatively includes also the most internal characters of the subject such as logic and the epistemological principles. Physis is immanent comprising the mind structure and meanings. Some philosophers consider that physis has been projected in human conscience and interpreted as the constitutive structure of human subjectivity (Picht 1989:110-3). The translation of physis to natura in Latin was not just a linguistic one (Heidegger 2000:13-15). Roman interpretation of natura emphasized the inherent movement, emergence and rise of physis. The dichotomy culture-nature made explicit by Descartes many centuries ahead started to build on from this period. Humans however, were considered part of natura (Lloyd 1992:21) in Ancient Rome and Greece. In his theogony *Works and Days*, Hesiod (700 B.C) offers an outline of three parts, cosmogony, anthropogony and politogony (Naddaf 2005:2) representing the organization of the world, men and society. In this context, physis appears associated with a moral and physical order (Crombie 2003:68), assuming that the sensual external reality possesses an order and it's loaded with values. Accordingly, the prevalent environmental ethics of the Ancient Greek seemed to pendulate between theocentric to anthropocentric views.

Beyond considering Physis a deity or the allegoric embodiment of an abstraction, and even before the excision of myth and logo in Ancient Greece, some pre-Socratic philosophers (5<sup>th</sup> c. B.C.) discussed about what constituted physis. In the most essential meaning *physis* is a supra-sensible alive divine substance in eternal movement. Literally physis is a persistent sprout, a creative generation (Barnes 1982, 1987) which for this historical period it is not just material (Green 2005). Something unable of growing lacks *physis*, that is does not have natura or essence (Barnes 1982). Overall physis is the essential character of something but in dynamic terms: how it is originated, develops and regulates itself, its real constituency (Naddaf 2005:3).

*“In the age of the first and exemplary growth of the Western philosophy from the Greeks, who for the first time asked about beings as such in their entirety, beings were named physis (φύσις). That foundational Greek word about beings usually is translated as nature. (...) What is it, then, that the word φύσις says? (...) Lexically it means φύειν, growing. But what is the meaning of φύειν? Does it mean only growth of quantity that something becomes something more and bigger? (...). Greeks did not begin to learn what φύσις is through the natural phenomena, but on the contrary: through a foundational poetic and noetic experience of Being, there opened before them what they will call φύσις. It was only through this opening that they could see also nature in the narrow sense. That way, then, φύσις, in the primary and original sense, means as much the sky as the earth, as much the stone as also the plants, as much the animals as man and human history as a work of men and of Gods, finally and above all it means Gods themselves with their destiny (Heidegger 2000:16).*

*Physis* is simultaneously divine in-apprehensible and material apprehensible through the senses. It included mind and soul in the same totality without opposition (Heidegger 2000:13) until the pre-Socratics initiated the reduction of this notion to organic processes. Empedocles defined matter as comprising four fundamental elements, water, air, earth and fire. The Ionics, philosophers from the same period, explained the world existence from the pre-eminence of just one of these fundamental elements: Thales of Miletus believed water to be the central element, whereas Anaximander deemed the air and Heraclitus the fire (Berner 1994:34-35). Likewise, the first analogical records between macro and micro-cosmos were produced by Democritus of Abdera (450-360 B.C.), a pre-Socratic. Therefore, the *logo* (word, argument, logic) which structures the human soul reflects the logos that structure the persistently changeable and mobile processes of *physis* (cf. Barnes 1982). This central idea of fundamental unity and harmony between men and its surroundings was broadly exploited later on with numerical principles by Pythagoras. It was used again during Renaissance and even today (Ghyka 1977; Berghaus 1992). With a more materialistic view, Leucippus and Democrates proposed the atoms doctrine, that is, the minimal particles upon which matter is divided. Atoms, the ultimate essence of *physis*, were considered infinite in numbers, incorruptible, qualitatively similar although taking different shapes. Atoms move eternally *throughout the infinite emptiness* while generating the diversity of objects and forms through their union and separation (<http://www.iep.utm.edu/g/greekphi.htm>, consulted on June25-2007).

*Physis* consists of the origin and development of the Universe as a totality, likewise the complete process of an entity. Given that humanity and society are part of that totality, explanations about the origin and development of humanity and society follow and ensue necessarily the same explanation (Naddaf 2005:1). Additionally since *physis* includes human nature there was no sense to set humankind apart from natura being one more of the cosmos genera (Lloyd 1992:11).

Summarizing previous to Plato and Aristotle thinkers proposed a notion of *physis* with at least four connotations: primordial matter, origin, process and result (Naddaf 2005:3, 163; Lloyd 1992:12). *Physis* was not completely separated from ontological and mythological views, neither from discussions about the *natural* etiology of diseases and illnesses (Lloyd 1992:8).

The shift from myth to *logos* is usually associated with philosophers after Socrates, when *physis* is opposed to *nomos* (νόμος socially built norm, experience and order) or antagonistic to *techné* (τέχνη art, craft, practical method to create an object or reach an objective). These partitions seem to be the foundation of oppositions between nature and culture, art or artifact (Lloyd 1992:13; Inwood 1999:137).

Plato initiates the pre-eminence of logic to offer phenomenological and conceptual explanations and causalities. He considered matter and its processes just as a reflection of the real knowledge of the world of ideas (*Timaeus*) where all final realities abode, where everything is truth, intelligible, eternal and immutable. The world of phenomena instead, is the earth sphere, a sensible one apprehended through the senses, where there are just mutable unpredictable states in permanent flux attempting to represent more or less the world of ideas. This world seems to be the one defined by Plato as nature but associated to the idea, with the essential and static appearance (cf. Inwood 1999:14). Plato's nature was pervaded by the mind which confers to it order and regularities. Christian medieval tradition found continuity in this notion inasmuch as all forms of assemblages apprehended through the senses were attributed to the mind answering God's orderliness. Moreover, Plato confers a constant movement to the natural world which does not contain the timeless and immobile principle that created the omnipresent first one, which possesses soul and animates other spheres (cf. Murray 1992:44-46). Some medieval theologians found meaningful similarities between the *Timaeus* and the Genesis and even between the ubiquitous vital power and the Christian Holy Spirit (*Ibid*:45). Aristotle also provided a far-reaching explanation about what constitutes *physis* distinguishing several meanings: origin or birth, from where life sprout or is generated (i.e. seeds), the source of movement or change, primeval matter from where things are made, the essence or shape of things, the essence of everything that has a source of movement (Collingwood 1944/1986:80-81). The last connotation is considered the fundamental notion of nature defined by Aristotle: something that has an internal source of movement and stillness. Plato and Aristotle weighted reality with opposite lenses; the first one was apathetic towards the permanent changeable condition of the world around and its phenomena whereas the last one was captivated by finding causal explanations of different sorts (formal, final, efficient and material). Furthermore, Aristotle attributed the responsibility to offer these explanations to the *natural* philosopher (Lloyd 1992:14). According to Aristotle, since the regularity of all changes was endless it has never had a beginning, therefore the world always existed denying a creation as a single event and supporting the astronomic stance (Murray 1992:48). Likewise, he considered all elements or phenomena to have a final function or ultimate purpose. People are animals by nature, although they are politics (from polis: city-state, society, state with community and belonging-to sense; Lloyd 1992:16). Aristotle's notion is teleological and normative, each element and phenomena has a reason to exist inherent to its constitution. Plato instead supported atomist explanations of causal connections among the elements and phenomena associated with his theory of shapes and what are the limits of possible comprehension. That is, knowledge belongs to the world of ideas, the unchangeable. Contrary, Aristotle looked at the ever changeable specificities and particularities of elements and phenomena: nature ultimately is immanently changeable it is immersed in a

principle of change (Lloyd 1992:20). His stimulation to study nature however, did not imply its appropriation or control.

Contemporary theorists eloquently disclose confrontations and disagreements about a single concept of nature as happened among Ancient Greek thinkers. Summarizing, at least three polemic macro-topics are found in this period: teleological, ethical and ontological ones: the immanent presence of ultimate purpose, inherent values and the condition of object or subject. Nature as object lacks meanings and rights; as subject includes human consciousness it is polysemic and challenging to apprehend.

### **3.2. Middle Ages**

The conception of nature during medieval time is manifold although the advocated environmental ethics was mostly theocentric. Beautiful and interesting documents touch upon medieval nature's notions such as *De natura rerum* by Isidore of Seville (7<sup>th</sup> century) and *Speculum naturale* by Vincent de Beauvais (13<sup>th</sup> century), for a literary audience; and from more popular treatises the anonymous *Le Livre de Sydrac de toutes sciences*, (13<sup>th</sup> century). Documents such as these constitute rich sources for the study of costumes and mindsets of people during this long period of Western history (Holler 1975:526). Ten centuries of ebullient ideas did not embrace a single concept of nature. Medieval society however, was dominated by Christian ideology according to which nature was a direct manifestation or reflection of God its omnipresent creator. Middle Age environmental ethics deemed mistreatment to any natural creature as offensive to God. Thus, some authors consider useless to look into the medieval roots for the current environmental crisis given the widespread fear of God as well as to the consciousness of men dependency in natural resources (Murray 1992:32; Barros 2001:150, 178). A paradigm of nature is Saint Francis of Assisi (1181-1226) who embodied the medieval ethics accrediting animals, stars and plants as direct interlocutors of God. Also during this time the "humanization of nature" was initiated (Barros 2001:168), or men appropriation of environmental resources for their benefit and survival given the growing historical demand of dependencies upon technology. The gradual increase of cultivation fields all along the medieval centuries indicates a meaningful population growth, aiming at the establishment of mercantilism and accumulation in Europe.

Alongside the Christian official discourse survived amid European medieval populations many different so called pagan traditions which were also deeply religious. Persuasive examples are the Nordic cosmogonies and anthropogonies which ascribed the cosmos' configuration and life substrate to the interaction of some deities with plants and animals. As happened among the Ancient Greece and Rome, during the Middle Age many etiologies of diseases were attributed to supernatural causes (cf. Rohr 2002:5-8). Doubtless such believes influenced popular notions of nature for which there are not enough records. Consequently non-official praxis and discourse had animist spots here and there (Murray 1992:32). Records from the 6<sup>th</sup> century complained about how peasant populations worshiped the sun, moon, stars and even the fire as if they were self-created deities (Barros 2001:151). Even the Roman pantheism survived coded in the weekday designations. Magic, astrology and alchemy were extensively practiced and expressed in many ways such as the omens read in the sky and other natural elements (Barros 2001:152). Officially the Catholic Church condemned to death all practitioners of pagan beliefs tagging them as witches, a punishment that contrary to abolish pagan practices increased its clandestine praxis. Indeed, the Catholic Church adjusted its religious zeal to magic and local creeds generating religious syncretism embracing dogmas with spirits, doctrines with superstitions,

saints with apparitions and the collage of devotions found at the dawn of Renaissance. Other spheres espoused syncretic processes. Simultaneous to the idea of earth as a flat sphere, medieval age inherited the late Greek-Roman tradition of cosmos imago associated to Ptolemy from Alexandria (~83-161 B.C.), according to which earth was a globe surrounded by eight concentric spheres. Saint Agustin and Isidore of Seville are two of many medieval scholars that disseminated this last view. Natural equivalence between macrocosms (earth) and microcosms (human body) was also a Christian explanation of human-nature association (Rohr 2002:9). Opposed to Ptolemy's view was Aristotle's that proclaimed a heliocentric system of crystalline spheres inside spheres which maintained a uniform circular movement. According to Aristotle, planetary movements belong to the perfect celestial realm therefore there was no need to understand its physical causes (Murray 1992:36; Pogge 2007).

Contact with the American continent played a role diversifying nature notions and environmental ethics in Europe. America boomed European imagination with the extraordinary prominent literary genre of the Bestiaries already crowded with incredible entities such as the antipodes (men with reversed feet living in the opposite side of earth), phoenix birds, headless people, tailed men, plants, animals and even stones displaying unusual shapes and countenances. The bestiaries were usually anonymous or from doubtful authorship, constituting literary creations at middle way between reality and fable. Anarchically, bestiaries assembled an assortment of variegated experiences loaded with speculations, emotions, and apprehensions, natural and religious histories as well as interrelationships filled with values, intentions, and moral ethics. Bestiaries were transcribed and translated by hand, thus they were easily enriched by the knowledge and imagination of the scribe. Furthermore, since the illuminator labor was not prescribed to an exact copy, each bestiary version has the hallmark of many traditions (Judaist-Christian, Greek-Latin, Egyptian, Mediterranean, etc.) along with that from the transcriber himself. As a result the meanings associated to images were very dynamic sometimes even contradictory or dissimilar ones. The Bestiaries view of nature substantiated the ways God revealed himself through metaphors to spread his messages to the world (Murray 1992; Teslesko 2001; Yamamoto 2000; Armistead 2001). Their communicative power was extensive among a vastly illiterate population. For instance, *The Physiologist*, a bestiary translated in many languages (Ethiopian, Armenian, Syrian, Arabic, Latin, Russian, Dutch, Provencal, English, German, French, Italian, Icelandic, etc., more than 64 Latin versions and over 100 different vernacular ones), was however of uncertain authorship (Aristotle, Peter of Alexandria, Saint Epiphany, Saint John Chrysostom, Saint Athanasius, Saint Ambrose or Saint Jerome) origin (Alexandria, Greece) and date (from 4<sup>th</sup> century B.C to 5<sup>th</sup> century A.C.; Armistead 2001:3-5). Meanings of animals, plants and the myriad creatures portrayed in the Bestiaries were related to curative properties or God cryptic messages that could even reveal the ultimate divine purpose and channel men's proper behavior (Wirtjes 1991:lxix).

For Medieval the mind as well as for many pre-Christian European cultures, the idea of man separated from his natural media was totally bizarre. No differences between human as subject and nature as object were established. Links among animals, plants, stars and men were horizontal, sprouting from kinship and identity (Barros 2001:154). Hybridization of Christian doctrine and some animist traditions is rooted in a monist belief by which each natural element reflects God's substance and his divinity. God turned in the absolute independent value whereas nature was a relative value dependent upon Him. Linked to monism in the Middle Age was the widespread appreciation of opposite states: Grace vs. Natural. The divine life within humanity was acquired by men just when they were willing to accept divinity inside them. On the contrary,

all men by nature were born with the original sin despite being created alike to God's image. Accordingly, the natural state lacked the intangible spirituality acquired with the ritual sacraments. By the end of the Middle Age this conception was vigorously spread as the environmental ethics prescribing the domination of the natural beast by men following God's command. Humankind was allocated at the center of creation and his role was the control and management of nature following God's wish. Saint Thomas of Aquinas' proposal of natural theology was instrumental to validate this interpretation (~1225-1274) since it found in nature enough evidence to demonstrate God's existence beyond spiritual revelations. Platonic influence is clear here since it was transferred the world of ideas to the divinity. However Aristotle's influence is stronger as reflected in *Summa Theological* where God's existence is explained through the effects of natural causes such as constant movement or natural change of the order as sensually perceived.

Among literary men a pre-eminence of reason was inserted in the natural notion: "all provisions that contributed to preserve the life of men belong to natural law" (Aquino, quoted in Barros 2001: 158) was initiated by the end of the 13<sup>th</sup> century. The notion of *natura* associated to *ratio seminalis* or the generative or germinator principle (seminal invisible interminable power that generates and reproduces) belonged also to Aristotle's traditions and was adopted by many medieval thinkers included Saint Thomas and Saint Agustin. Such a doctrine allowed theologians to associate the idea of species essentialism (fix entities) with the mutability and change of appearances (Murray 1992:51). Nevertheless medieval rationalism was restricted to very few social spheres, and the rational connections of cause-effect were discussed in exceptionally small circles. Contrary, the cause of most sufferings (earthquakes, hurricanes, epidemic diseases, sudden death, etc.) was attributed to reasons not much different to those considered by the animist logic (usually to demons or wickedness human behavior). To avoid divine wrath medieval environmental ethics prescribed laws that prohibited abusing or mistreating nature, given that it was God's image (Barros 2001; Rohr 2002).

### **3.3. Renaissance to Enlightenment**

The anthropocentric environmental ethics is consolidated during this historical period when worldwide influences of Western Europe took place (mid-15<sup>th</sup> to early 19<sup>th</sup> centuries). It was a time of much cultural movement known as the Scientific Revolution having as a cause questioning the amalgamation of magic, alchemy, astrology, abstraction and experimentation. Separation of fields of knowledge generated the invention of science (Debus 1978:2) as a very specialized sphere of understanding. The transitional state of science was evident through the praxis of pioneers such as the Franciscan Roger Bacon (1214-1294) who stimulated a method of observation and experimentation, Isaac Newton (1642-1727) who proposed the laws of movement and opened up the way for mechanic physic or Paracelsus (1493-1541) who simultaneously explored alchemy, occultism and medicine. Contemporary researchers and thinkers like them did not hesitate to have the same fascination for abstract thought and scientific methods as for metaphysics, magic, the search for harmony or perfect proportions as well as for transmutations. Multifaceted artists such as Leonardo da Vinci (1452-1519), Miguel Angel (1475-1564), or Rafael (1483-1520) joined this new path reformulating Art and dwelling in a diverse range of disciplines in order to explore knowledge from multiple perspectives. This period offered the foundations of a new world order that are still well grounded. The Europe of the 17<sup>th</sup> century crafted Protestant ethics associated to capitalist economy (Weber 1905/2001) which in direct correlation activated the development of science (Merton 1938/1970) and a new

environmental ethics. Interest in scientific research, assumed to be compatible with ascetic values supported by the emergent science and religious Protestantism has been known as the (polemic) thesis of Merton (Cohen 1990; Rattansi 1990). Protestant religions accordingly, encouraged rational and empiric investigation to identify earth's divine order and its practical applications. Religion legitimated science and vice versa. A new notion of nature was progressively built thanks to technological improvement in the fabrication of scientific tools and gears in order to measure and observe the empirical reality. Likewise, a more flexible stance in searching rational causal explanations of phenomenological reality took place: "the seventeenth-century conception of nature has remained the basis of the Western view of reality ever since, so that it is impossible to imagine the whole enterprise of modern science, the central and determining feature of contemporary Western Civilization, apart from this background (Westfall 1992:64-65)".

Although it is naive to assume homogeneous processes or absolute concepts in the broad temporal and spatial specter treated here, a hegemonic new vision emerged during the 17<sup>th</sup> century since the "natural" (object) and "social" (subject) spheres were axiomatically separated. The new (scientific?) constitution of nature as object from this period on has been inherently secular, mechanical and quantifiable. This official conception of nature did not eradicate the persistent subjectivization or animation of nature in other social contexts. The new view established a direct correlation of quantification, explanation and accuracy of natural phenomena (Westfall 1992:70-71). The mechanic conception of nature was explicitly consolidated with the formulation of the French philosopher René Descartes (1596-1650), a key figure in the Scientific Revolution (Kuhn 1962). Descartes crafted the fundamental paradigmatic change from the natural Aristotle philosophy, centered in substantial matter and shape to the proposal of nature as a mechanic reality derived from the Greek atomists. More than any other thinker Descartes established direct relationships between Mathematics and nature. Along with Thomas Hobbes, Pierre Gassendi and other contemporary philosophers, Descartes conceived nature and all organisms, even man, as moving machines. This mechanistic explanation was adopted rapidly in diverse fields such as Biology, Medicine, Physis, etc. (Westfall 1992:73). The consolidation of opposite binary conceptual terms is also attributed to Descartes; a set of them is the contrast of allegedly different domains, represented by social and natural scopes mentioned here.

Separation between science and church was also consolidated during this period, regarding them as inherently belonging to different realms, despite the religious zeal professed by many scientists. The importance of divinity to explain phenomena still found echoes in many individual scientists but science's authority was established: no longer were the scriptures able to define what was appropriate for scientific research, all the opposite, science would ponder how truthful religious creeds could be. The Christian dogma was substituted by scientific dogma (Whitehead 1920/1957).

The separation of society-nature found echoes in the dynamics of contacts between Europe and America in topics such as the established and known civilization versus the shapeless wild and unknown cultures, the inquire of soul equivalence and even soul's presence or absence in different kinds of men, slavery justification, etc. All these issues involve a reflection about nature to find conceptual validation. Contact with America prompted the intensification of resource use. Capitalist rationality benefited by several processes such as the gradual, although massive introduction of new crops (corn and potatoes) which increased appreciably the deforested areas during the 16<sup>th</sup>-17<sup>th</sup> century, along with the need to built more ships used for transportation, and the growth of commercial urban centers based on the richness brought from the new continent

(Barros 2001:173). The conquest of resources and lands consolidated the pragmatic and ideological separation of human and natural spheres. Enlightenment promulgated reason as the primordial base of authority pioneering the Industrial Revolution when the relationship of open domination and conquest of one sphere over another is a paradigmatic one.

### 3.4. Modern to Contemporary Age

The 16th–17th-century physicist Galileo Galilee, psychiatrist Sigmund Freud and naturalist Charles Darwin despite coming from different countries and fields of knowledge drawn on common fundamental issues that played down widespread tenets associated to anthro-centrism. Essentially, men were no longer central to understand how nature functions, earth is not the center of the Universe, the human mind is stimulated by unconscious irrational powers and *Homo sapiens* was just one more of the densely bifurcated branches of the tree of life. Humans were taken off the center of life. Such global des-centering of humans definitely changed forever self perception of the Western world associated to nature. All the species in the world are non essential, changeable and non teleological, including *Homo sapiens*. They are the result of variable historical contingencies, are improbable, imperfect and diverse, and cannot be preprogrammed: they are ruled by natural selection. Paradoxically, the most prominent environmental ethics promoted was anthropocentric, aimed to satisfying human values beyond exclusively people's needs. Recent decades however, have experienced an urge to move the ethos towards bio and eco-centric stances.

The most commonly contemporary notion of nature used both in scientific and popular media was consolidated some 200 years ago. As outlined above, it was crafted in Ancient Greece and consolidated in the Enlightenment with 18<sup>th</sup> century thinkers (cf. Bargatzky 1992:9). A significant legacy of this tradition is associated with the partition of knowledge through different logos and episteme (Biology, Geology, Zoology, Climatology, Anthropology, Neurology etc.). Nature from a scientific stance is seen as isolated compartments that must be understood in depth but usually are not comprehended in their holistic context. The lack of a *Gestalt* view offers isolated pieces about a complex reality that does not explain nature's integral design (cf. Bargatzky 1992:18; Berner 1994:29). Current Western scientific concept of nature is truly an episteme:

*“the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems; the way in which, in each of these discursive formations, the transitions to epistemologization, scientificity, and formalization are situated and operate; the distribution of these thresholds, which may coincide, be subordinated to one another, or be separated by shifts in time; the lateral relations that may exist between epistemological figures or sciences in so far as they belong to neighboring, but distinct, discursive practices. The episteme is not a form of knowledge (connaissance) or type of rationality which, crossing the boundaries of the most varied sciences, manifests the sovereign unity of a subject, a spirit, or a period; it is the totality of relations that can be discovered, for a given period, between the sciences when one analyses them at the level of discursive regularities (Foucault 1972:191)”*

This episteme runs parallel to the building of a power discourse. Despite centuries of study, *nature* remains indecipherable, uncontrollable and indomitable; it is still filled with more unknowns than explanations. Contingent to a historical moment, nature is subjected to all control

mechanisms required by the discourse. A meaningful conceptual adjustment took place in the 1960's with the impetus of system theory and thermodynamic laws which pervaded the scientific thought with paradigmatic strength *sensu* Kuhn. Then, eco-system referred to ecological systems originally self-regulated harmonic, closed systems susceptible to postulate generalizations that eventually could be put forward as laws (Odum 1993). Nowadays ecosystems are defined as dynamic, unstable, variable, and multi-scalar composed of biotic and abiotic elements that interact at diverse levels of complexity. Disturbances of any ecosystem component could activate cascade effects or alternatively can intensify changes or dynamics in other components of the interrelated system. Non-human spaces, entities and dynamics are natural. On the contrary, all human processes and constructions are sociocultural. Nature and people are conceived as two spheres apart. Sociocultural and natural systems are so much conceived apart that the most basic science division reifies precisely those labels. Courses, projects, libraries, buildings, students, professors, disbursements of research funds, and so on are separated first and foremost on that primordial partition: Social vs. Natural Sciences.

### **3.5. Call for a new ethics**

The current environmental crisis stirred by the massive extinction of nature individuals, species, populations, communities, ecosystems and even landscapes at local, regional and national levels and beyond of any country or frontier has necessarily contributed to rethink of the concept of nature. Such re-conceptualization had an initial drive during the mid 1960's with the ecosystem theory. A second vigorous moment persistent until now is given by the considerations and call for actions explicit in the conservation biology paradigm which has pervaded mass media and global politics. A crucial plan demands a change in people's environmental ethics. Ethical changes request attention to human positioning towards non-humans and their surroundings commonly synthesized as intrinsic vs. instrumental values (Lewis 1970; Rolson 1975; Regan 1981). The sprouting of worldwide conservationist actions expressed in multiple declarations, treaties, conventions, laws, movements, international campaigns (i.e. Convention on International Trade of Endangered Species of Wild Fauna and Flora 1973; Brundtland Report 1987; Earth Summit 1992; Convention on Biological Diversity 1992; Kyoto Treaty 1997; Assisi Declaration 1999; World Summit 2002; etc.) and so forth, has legitimated these categories to the extent of institutionalizing a world conservation agenda half way between praxis and discourse.

Eclectic ethics informed by a variegated of worldwide philosophies and believes have taken particular active roles in the implementation and adherence of global behavioral changes towards nature. Some successful movements such as Deep Ecology (Arne Næss 1973), Autopoiesis (Francisco Varela and Humberto Maturana 1974), Gaia (James Lovelock 1979) and Biophilia (Edward O Wilson 1984) have gained many supporters in academic, religious and lay circles. These movements and others with the same profile and aim are linked by a main goal: the preservation of life on earth, sometimes with teleological views but most of the times stressing the inherent value of any and all life form. However, just a minority of the world population advocates these views which, as we shall see bellow, are not that different from ancestral ones in the Americas.

### **4. Amerindians' Alternative perspectives: utopia or continuity of a vital design?**

The Edward Sapir- Benjamin Whorf hypothesis is one of the most famous dilemma in cognitive philosophy and linguistic. It advanced the theory of a systematic relationship between a person's language grammatical categories, his/her thoughts, world perceptions and behaviors:

*“‘real world’ is to a large extent unconsciously built upon the language habits of the group (...). The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached... We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation.”* (Sapir 1929/1958:69).

A main relational question underlying this statement is *words precede thoughts or generate them?* Different linguistic patterns and categories would produce different thinking and behavioral patterns:

*We dissect nature along lines laid down by our native languages (...). We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way - an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is, of course, an implicit and unstated one, but its terms are absolutely obligatory* (Whorf 1940/1956:213-14)

Western notion of nature accordingly would derivate from rationalities that prompt the destruction of the foundations of life on earth, which are underlying our current behavior towards non-human components of the world (Bargatzky & Kuschel 1994:6). This probably is also one of the conclusions of the German philosopher George Picht who highlights that natural science destroys nature since proclaims an objective notion that helps to control what it (Picht 1989:13). In this context is very significant that all Amerindian languages known lack a term or lexeme that could be translated as nature, they do not have words equivalent or even approximate to our idea of nature, neither do they have words to label our corresponding socio-cultural sphere. Contrary to western terms where nature and society imply *a priori* that there are two spheres (albeit parallel but different in the sensitive reality) Amerindians have no terms but a single sphere of life usually non-nominated. The prevalent ideology in contemporary Western world considers two abstractions, thus two categories, which indicates the need to separate two domains since inherently, essentially and substantially they are considered apart and distinct.

For Amerindian peoples to think and to act are co-extensive, thoughts and behaviors are in the same ontological space (Viveiros de Castro 1992, 1998). Meaning and matter are aspects of the same reality; to utter something is enough in many mythological narratives to materialize the existence of someone, something or a process. Mention a word is sufficient to trigger transformations or to initiate the crucial dynamics of any event. Nature as a unified non-human domain does not exist as an idea among Amerindian peoples. Like people, animals, plants, stones, mountains, rivers and many others components of cosmos have cultures. As has been broadly theorized, especially by the Brazilian anthropologists Tânia Stolze Lima (1986, 1995, 1996, 1999) and Eduardo Viveiros de Castro (1979, 1992, 1998, 2003), among Amerindian peoples nature and culture are points of view, percepts and not analogical concepts, furthermore, they are interchangeable according to context and relationships. There is one sphere of life, a non-divisible one, and all entities are in it. Organism and environment do not denote two separate things but a no-detachable totality, a system of development, a growing process, in sum an ecogony.

Amerindian peoples are defined here as those native cultures considered descendents from the first groups that populate and dwell in the American continent, inhabitants that over the

centuries have persisted in the Americas as diverse populations. Taken language as a differential diacritic of ethnic groups there are 1002 languages spoken in the Americas today, excluding those of Western origin corresponding to 14.5% of non-Western languages of the world and approximately 50,496,321 speakers (Lewis 2009; Migliazza & Campbell 1988; Loukotka 1968). This 1% of world population has much to teach the Western world precisely on environmental ethical grounds. However, Amerindian ethics and philosophies are not panaceas of solutions to the very complex environmental problems worldwide today. Most Amerindian groups have been outraged, absorbed, mistreated in many different degrees whereas most of their basic rights have been violated (life, health, education, social, political, economic, linguistic, ideological, etc.). Amerindian global cultural systems have been undermined, disturbed or destroyed given asymmetrical contacts subsumed in power discourses and actions for the last 500 years. I only pretend to offer an alternative mode to conceptualize and act in the current sensual reality, one that instead of destroying creates life. The example described here can be cautiously extrapolated in essential aspects to other Amerindian peoples (such as Airo pai, Arawete, Ashuar, Baniwa, Cashinahua, Curripaco, Ese eja, Eñepa, Juruna, Kayapo, Kuikuro, Guajá, Huaorani, Inuit, Makuna, Makushi, Muinane, Naded, Nukak, Parakana, Pemon, Tukano, Waiwai, Wari, Warao, Yanomami, Yawalapiti, and Yekwana). Precisely, the reification of one perception of nature (assumed right) is what has minimized Western world possibilities to rethink alternative ways of life.

## **5. Concluding notes**

This essay has explored superficially the historical account of nature's notion from diverse perspectives. Essentially, nature considered inside humankind (associated to ethics and values, consciousness and immanence) and nature conceived outside humans (as a distinctive, segregated object). Basically, it presented entangled perspectives of nature's notions in order to motivate reflections on the reader about the similar and different perspectives on inhabiting our injured earth. Nature's concept is loaded with a view of knowledge and apprehension of reality; it is imbued in a value system and can cause diverse conducts. Therefore, nature's conception is paramount to understand what underlies the environmental ethics of a period or culture. A key goal of this essay was to uncover more reasons to believe in the possibility of aggregate environmental ethics from dissimilar spaces and times, cultures and traditions, in order to contribute to the healing of the world. Albeit, this essay offers a limited diachronic overview of concepts given to nature by and within some traditions qualified as Westerns, which, as mentioned before embraces worldviews and practices of cultures subsumed and adapted to the west such as Germanic, Asia Minor and Egypt.

In Western tradition, physis or nature was conceived originally as a primordial entity, similar to many Amerindians groups, originally Greek-Roman traditions imbued nature with sacred and divine character. This trait survived during the Middle Age and is still alive in numerous cultures and subcultures of the world today, promoting an environmental ethics that appeals distinctly to human senses and behaviors. Simultaneously a secular and utilitarian notion of nature arose in secluded circles of scholars since Plato's times until it turned the hegemonic notion during the Enlightenment reaching the 20<sup>th</sup> century as the official undisputable one. Nevertheless, a fan of diverse views of nature endured between these two poles, whose environmental ethics were built at different degrees of nature as subject vs. nature as object. Nevertheless, since the 18<sup>th</sup> century the scientific concept of nature emphasized a strong annulment of religion to secularize it, nature is all that is not God (Becker 1994:49). The proper

behavior or ethics was excluded from that moment on in the natural discourse. Nature turned into an object and lost exclusive ethics as subjects do. Nature as an object could simultaneously generate systematic answers and solutions to (logos) understand the perceptual reality. Among the multiple worldviews Western people promoted a rational and self-contained conception of nature in order to explain causes and processes through formal methods (scientific disciplines).

There are in this overview, implicit relationship between myth and science, and analogically religion and science. The logic and rationality underlying nature have been historically explained by myth, religion and science even in very disparate times and cultures through ontological premises significantly similar. Myth, religion and science, apparently so far away, tend to apprehend and explain some phenomena and construct knowledge through surprisingly analogous causal processes (Hübner 1985:289 quoted by Berner 1994:28). Restricted to the interest of this essay, science, myth and religion provide environmental ethics that trigger or prevent behaviors through the potential upsetting of the minimal conditions of life. Marx Planck, Albert Einstein, the medieval images and Gaia, allow the perceptor both polysemic and polyphonic meanings encapsulated in diverse networks of referents (Eco 1988:56). The main goal of these messages is to encourage people to behave with certain awareness of humans' dependency upon environment therefore the need for care/tender towards non-human spaces and entities in order to contribute with the continuity of life. The reasons underlying the diverse ethics oftentimes are associated with the divinity. Even well known scientists such as Marx Planck and Albert Einstein do not find contradictions in the fundamental aspects between religion and science (Berner 1994:29-31), neither existed during the Middle Age, religion somehow led science. As the legacy of the bestiaries point out nature was the expressive allegory of God, was a material appearance of God.

The meanings squeezed in the complex images coached the perceptor into diverse readings weaved in ethical premises. Probably one of the highest Western historical marks related to religion and nature is revealed in Saint Francis of Assisi (13<sup>th</sup> century) used over the centuries by many conservationist organizations with the final goal of influence the ecological behavior of Catholics. Saint Francis is understood as a symbol that synthesizes the material and spiritual aspects of nature. Not by chance, diverse ecologist encounters are organized in Assisi Saint Francis hometown. A prominent one took place in September 1986 when the World Wildlife Foundation celebrating 25<sup>th</sup> anniversary congregated over 800 ecologists in Assisi, including leaders from five religions in the world (Buddhism, Christianity, Hinduism, Judaism and Islam). The central idea was to stir the ecological consciousness and behavior of their followers prompting a religious environmental ethics rooted in their doctrines and creeds. The final document known as Assisi Declaration constitutes an explicit sub-product of how religious documents should encourage a significant change in the ecological behavior of the devotees. Basically the document encourage that each religion in the world gets involved in environmental issues with a clear pragmatic conservationist goal.

After this declaration a Network on Conservation and Religion (now known as ARC, Alliance of Religions and Conservation) was created associated to WWF. In 1995 in Japan and England were celebrated two conferences (Summit on Religions and Conservation) where the declarations of other religions were added to the Assisi document (Bahai`i, Jainism, Sikhism, and Taoism) and even two more religions added their views in 2001 (Shintoism and Zoroastrianism). The strong connections between religion and environmental ethics stimulate concrete conservation projects nowadays (<http://www.arcworld.org/>). A significant reflection deriving from these set of meetings is precisely the positioning of the religion as related to the

environment. Thus, religions such as Buddhism, Hinduism and Jainism, tend to emphasize the intrinsic value inherent in the biota and by extension on nature. These religions conceive people's relationship with their surrounding as more biocentric and even ecocentric just as those of Amerindians' traditions. On the contrary, religions such as Baha'i, Christianity, Judaism and Islam are more inclined to weight the instrumental value of the environment being then closer to theocentric and anthropocentric environmental ethics.

Not just Saint Francis but traditions from all over the world and since at least 10.000 years support the ontological and immanent relationships between spirit and nature. The persistence of religion-nature relations is recorded practically in all known cultures. A recent example appears in the 11 guidelines of the spiritual naturalist, the first of which states pungently that the spirit is the source of nature (<http://www.hummingbirdworld.com/spiritnature> checked on October 7 - 2007).

Indeed, the idea of nature carries with it, a view of knowledge and apprehension of perceptual reality filtered also by the analyst own historical, social and even ontological stance. In this sense, nature is imbued in a system of values that activates very diverse behaviors. Therefore, as A.C. Crombie pronounces, the history of Western Science as the history of a vision and an argument, initiated by the ancient Greeks in their search for principles at once of nature and of argument itself. This scientific vision explored and controlled by argument, and the diversification of both vision and argument by scientific experience and by interaction with the wider contexts of intellectual culture, constitute the long history of European scientific thought. Underlying that development have been specific commitments to conceptions of nature and of science and its intellectual and moral assumptions, accompanied by a recurrent critique; their diversification has generated a series of different styles of scientific thinking and of making theoretical and practical decisions. From this argument, derives a meaningful reflection: the responsibility of scientists and their awareness that his/her notion of nature used in his/her research are not empty of political and decision-making meanings (related to city, environs, polis management and order) and are the result of a historical outcome interacting with the present.

Finally *nature* notions in any space, culture or tradition are crafted, changeable and associated to particular ethics which doubtless contribute to perpetuate or exclude decisions and politics on, about or in the socio-ecological systems.

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