IN THE SHADOW OF THE ENLIGHTENMENT: FROM MOTHER EARTH TO FATHERLAND
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1. INTRODUCTION
This dissertation examines some ecofeminist critiques of modern conceptions of nature. It focuses on the re-evaluation of the nature conception within western thought, following the emergence of science in the Enlightenment period. It looks at the analysis that some ecofeminist critics have elaborated in relation to the work of two of the “founding fathers” of modern science, Francis Bacon and Rene Descartes, to understand how they re-conceptualised nature and re-associated it with the new conception of women. The focus is on the Enlightenment era because the ideas, then constructed, brought about intellectual, political and economical revolutions that are now considered to be the foundations of our modern western society, economy, politics and beliefs. These have been constructed in a way that is so disengaged from nature that a fatal destruction of nature and a deterioration of social relations have been allowed. Whilst the analysis will be concentrated in the area of science and its epistemology of rationalism, it is recognised that they do not exist in a vacuum and are relevant and inter-connected to other topics, such as religion, economy, politics, etc.

The analysis will use the ecological feminist critiques elaborated in the last few decades by theorists, such as, K. Warren, V. Shiva or M. Mies, and contemporary postmodern approaches, to reject and deconstruct these and any other discourses attempting to establish an absolute ground for knowledge and therefore a breeding ground
for patterns of domination. I aim to show that underlying these conceptions of woman and nature there are dualistic constructions that have proved to be most destructive to life and our relationships with nature and other humans. This dissertation supports the ending of ‘all universal ideologies based on a universal concept of human beings and their relation to nature and other human beings’ because they have been deconstructed as being eurocentric, egocentric, androcentric and materialist (Mies & Shiva: 1993: 11). People on the streets, the academic world, the green movement, indigenous peoples and even some novel scientists are criticising western environmentally destructive policies. It is not argued here that the ideology of science and modernity are solely responsible for the current environmental crises or the nature of patriarchal domination, as their roots go way back in history, but it will be argued that they did allow for the unprecedented acceleration of abusive practices which have now escalated into a holocaust against creation. Vandana Shiva described the current situation in these disturbing terms:

"The earth is rapidly dying: her forests are dying, her soils are dying, her water is dying and her air is dying" (1989:xv).

It is this situation of destruction, which these ideologies have caused, that has compelled me, and many others, to look for alternative approaches to life. In order to effect life-enhancing change one must first reach some understanding of what it is that needs changing in the dynamics of western culture. Gandhi was once asked ‘what do you think about western civilization?’ to which he replied ‘I think it would be a very good idea’.

The Enlightenment period was an age of fundamental and influential thinking. It has been ‘generally agreed that this period was marked by an important and continuos trend of thought which effected a revolutionary change in the outlook of Europe’ (Cobban, 1960: 28). However, the only revolution that materialised for women, animals or nature was that their already oppressed positions were to be ever further entrenched The philosophical, political, economical and moral thoughts of that time are considered to have founded the dualistic structure of modern societies, where Man is understood not only as disengaged from nature but antagonistic and superior to it. Here, it is argued that this conceptual framework is based on key concept of rationalised patriarchal anthropocentric domination. The most notorious changes that this period effected upon western society were the birth of capitalism, the formation of modern democratic states, religious reformations, new trends of philosophical thought and the rise of science and technology. Although all these
changes have affected our modern relation with nature, this dissertation is only focussing in the effects that science produced, as this is the discipline in charge of understanding and working with nature.

Scientific knowledge, as well as economic development and material gain were central and sacred to the Enlightenment Age. The Enlightenment project, guided by science, development and progress gave the “green light” for environmental destruction, not just in the already "man-aged" European countryside, but into the “virgin” lands that colonialist were conquering all around the world. Man was no longer part of nature and the earth became a natural resource to plunder. In the contemporary view, through the questioning and deconstruction of science and development as universal projects, the Enlightenment is beginning to be understood as a process that destroys life and life-enhancing attitudes.

It must be observed that the term "nature" that is used in this dissertation encompasses all life, from animals to trees to rocks and humans. The whole theme of this dissertation is to urge a return to seeing the circle of life instead of the Enlightenment dualistic structure, with humans at the zenith of creation. When such terms as "nature and women" are deployed it is absolutely not meant to suggest any sort of dualistic difference but are merely there for grammatical convenience, and it is not meant, in any way, to suggest some hierarchical anthropocentrism. This dissertation is written with a view to reforming the detachment of the human being into a sense of belonging be celebrating the fact we humans are animals and part of nature.

The first chapter will introduce ecological feminist ideas that have been used to examine the different transformations, which the conception of nature bore during the scientific revolution in the Enlightenment. This chapter is based on the work of Karen J. Warren (1996), where she has produced a magnificent brief introduction to ecofeminism. It will describe the ecofeminist main critique of modernity as a tradition based on patterns of patriarchal domination of women, colonised people, animals and nature. Patriarchal domination was not invented, but intellectually rationalised, during the Enlightenment. In this chapter, the direction of the dissertation will be determined, as a study of the historical and causal formation of the conceptual structure created during the Enlightenment, specifically the relationship between the modern concepts of nature and women within the scientific discourse. There will also be some
discuss the relationship between ecofeminism and postmodernism in respect to their critiques of the Enlightenment.

The second chapter is the critical analysis of the changes effected upon the notion of nature, and our relationship to it, due to the rise of science in the Enlightenment. The focus is on the gender association of nature and women, through the work of Carolyn Merchant who proclaimed in the title of her book what had occurred in the scientific revolution - The Death of Nature (1980). This book looks at the transformation of an organic view of nature to a mechanistic one. Her argument will be examined in relation to the work of Francis Bacon, one of the founders of natural science, through Susan Hekman’s study of his writings. The main dualism under scrutiny here is the nature/culture one.

The third chapter focuses in the epistemology of science: rationalism, with special attention to the work of René Descartes who played a crucial role in its formation. Descartes is seen as the father of modern philosophy and his mechanistic approach to life gave rise to Cartesian philosophy. His approach is analysed in psychoanalytical terms through the work of Susan Bordo who correlates his attempts to separate the mind and body with the child and mother separation during the Oedipal identity formation. She refers to this process as the masculine re-birth of humans. Here some other dualisms will enter the discussion, such as object/subject, mind/body, and reason/emotion.

2. ECOFEMINISM

This chapter aims to describe the theoretical framework that this dissertation employs to analyse the changes to modern societies and to their relationship with nature that the Enlightenment brought through the development of natural science. This chapter is based on the work of Karen J. Warren (1996: ix-xxvi) because she is the author of one of the best overviews of ecofeminism. Ecofeminism is a new movement born out of the high interest given, in the last few decades, to both feminism and ecological/environmental movements (ibid.: ix). Feminists are interested in why women are treated as inferior to men, and why they have only been partially included in the sphere of culture. Environmentalists are interested in why nature is treated as inferior to culture and why humanity has not commonly been included within the definitions of nature. Both movements seek liberation so ecofeminists by connecting them together are aiming to construct new practices based on a model of non-domination. It is argued that there can not be real women’s liberation or ecological solutions within modern industrial capitalist society because its ‘basic socio-economic relations and its underlying
values’ are founded on patterns of domination and exploitation, therefore the best way to achieve a real positive change is ‘uniting the demand’ of all those oppressed by this system (Ruether, 1975: 204 in ibid.: ix).

There is not only one monolithic ecofeminism, but a multiplicity of positions, because as Warren points out, when different feminist perspectives: liberal, Marxist, radical, socialist, etc. are combined with different environmental philosophies, a diversity of viewpoints about the relation existing between the different kinds of dominations, to women, indigenous peoples, animals, our environment and the rest (ibid.: x). These viewpoints form a variety of proposed positions identified as ecofeminist. They will hold different understandings of the roots, the tactics, and solutions to, the present environmental and social problems they challenge. ‘What one takes to be a genuine ecofeminist philosophical position will depend largely on how one conceptualises both feminism and ecological feminism’ (Warren, 1996:x).

However, Warren highlights an ecofeminist common ground where the notions that a crucial connection between women and nature is recognised as well as the domination to which both have been subjected (1996: x). Whilst these connections may be the site of its common ground, it also provides the main area for discussion, in relation to the nature of this link. Here, in this dissertation, the ecofeminist inquiry is directed to the critical period in history of the Enlightenment. This type of inquiry is, in Salleh's terms, characterised by the causal claim ‘that the current global environmental and social crisis is a predictable outcome of patriarchal culture’ (1988: 138, n.1 in Warren, 1996: xi).

Many ecofeminists argue that ‘the historical and causal links between the domination of women and of nature are located in conceptual structures of domination and in the way women and nature have been conceptualized, particularly in the western intellectual tradition’ (Warren, 1996: xi). A conceptual structure or framework is defined by Warren as the ‘socially constructed set of basic beliefs, values, attitudes, and assumptions that shape and reflect how one views oneself and the others’ and she described the one used by modern industrial societies as oppressive and patriarchal in that ‘it explains, justifies, [rationalises] and maintains’ relationships of domination and the subordination of women and nature (1996: xii).
Plumwood (1993 in ibid.: xi), among others, uses the structural idea of 'value dualisms' to establish the conceptual source which different western social models throughout history have used to persistently dominate, specially women and nature. She argues that the western intellectual tradition has founded its conceptual framework on a structure of value dualisms and her book focuses specifically in the rationalistic tradition and its reason/emotion dichotomy. Value dualisms, as described by Warren, are 'disjunctive pairs', where the relationship between 'each side' of the pair is 'oppositional and exclusive' rather than 'complementary and inclusive' (1996: xi). Moreover, a 'value hierarchy' has been established in each value dualism, so that a higher value is granted to one aspect of the dualism, in opposition to the other aspect, which is associated with lower status (ibid.: xi). Some examples highlighted by Warren of 'these hierarchically organized value dualisms' are: culture/nature, reason/emotion, man/woman, mind/body, human/animal (ibid.: xii). This structural theory of value dualism argues that in western history, nature, emotion, woman, body, and animal have been regarded as oppositional and inferior to their respective disjunctive pair, culture, reason, man, mind and humanity and therefore the only history that western societies can tell is one of domination and oppression (ibid.: xii). On this basis, Warren argues that, Western tradition has been founded on oppressive conceptual frameworks that are common to all 'social “ism of domination”' such as sexism, racism, speciesism, anthropocentrism (ibid.: xii). These oppressive conceptual frameworks are characterised by notions of power, relationships of domination and a inner logic that explain and sanction oppression, it is like 'a structure of argumentation which justify subordination on the grounds that superiority justifies subordination' (ibid.: xii). As the next chapter will show the modern nature/culture dualism has been historically constructed through the role it played in the development of science during the Enlightenment. Following on from that it will be showed how this dualism is linked to rationalism, an episteme that privileges reason and subordinates emotions. The conceptual value dualisms hidden in this philosophy will be studied through the metaphors and symbols used to express the supremacy of culture over nature and of man over woman.

Susan Hekman has highlighted the relationship between the contemporary intellectual debate of postmodernism and that of ecofeminism because both movements ‘question the foundationalism and absolutism of modernism and propose instead a non-dualistic, non-unitary approach to knowledge’ (1990: 1). They both challenge the epistemology of the Enlightenment as misconceived, and aim to construct a new way of coming to terms with humanity, ‘human
knowledge and its acquisition’ (ibid.: 1). The search for new epistemologies dismisses any ‘attempt to find an absolute grounding for knowledge’ (ibid.: 4). This is the rejection of the great narratives, which has been expressed through two main rejections: that of the dualistic structure underlying modern thought and that of the scientific model of knowledge, developed in the Enlightenment, as ‘the only paradigm of knowledge’ (ibid.: 4). Until recently, natural science has been considered as representing the paradigm of true knowledge, perpetuating thus, its epistemological superiority over any other discipline of study, but postmoderns, ecofeminists and others, are objecting to this hegemony. They challenge ‘this hierarchical view of knowledge’ by focusing on ‘the interpretative [and constructive nature] of all human knowledge’ (ibid.: 4). However, the ecofeminist’s (and feminist’s) objection refers more specifically to the gender bias that modern western epistemology, best developed in the area of science, upholds. In this sense, Hekman explains that rationalism is regarded as ‘a specifically masculine mode of thought’ and the scientific claim that truth can only be achieved by ‘rational, abstract and universalistic’ thought is fundamentally regarded as a ‘masculine definition of truth’ (ibid.: 5). The rejection of the dualisms also relates to the gender bias that this structure sustains, because behind each of the dualisms on which the Enlightenment arguments are based there is a ‘fundamental dualism’: male/female (ibid.: 5). All dualism, such as culture/nature, rational/emotional or mind/body, contain a privileged element, always associated with the male and a devaluated one linked with the female (ibid.: 5). It is then possible to say, in a simplified way, that ‘the feminist critique extends the postmodernist critique of rationalism by revealing its gender character’ (ibid.: 5). In this way, the conceptual nature/culture dualism is, in this dissertation, analysed in relation to its gendered association of nature with the conception of women and female and culture with the conception of men and male. Hekman concludes that both movements, (eco)feminism and postmodernism, seek the epistemological dissolution of ‘the hierarchical dualism of the Enlightenment thought’, and its replacement by an epistemology that accept ‘that there is not one (masculine) truth but, rather, many truths, none of which is privileged’ (ibid.: 8, 9).

3. THE DEATH OF NATURE AND THE RISE OF SCIENCE
This dissertation focuses on science because it is one of the most powerful forces in modernity. Scientific practices and assumptions have heavily influenced much of our current thinking and relations. It has determined, and still does, many of our
cultural and intellectual assumptions as well as our potential for
 technological control of our environment (Outram, 1995: 47).

During the Enlightenment, when science -as a discipline- was born, the term science did not exist. The word 'science' was not introduced in English until the 1830s. The discourse of science, as a practice and inquiry of nature was first developed within other intellectual disciplines under the heading of 'Natural Philosophy', and not yet as a separated defined body of knowledge: Science (Outram, 1995: 48-9).

The religious Reformation and concretely its emphasis on individual interpretation, had created, within the intellectual world of the seventeenth Century, a ‘serious problem of the source of certainty and authority’ in knowledge (Merchant, 1980: 194). Martin Luther (1483-1546) gave to everyone freedom of conscience to choose their own religious truth but this presented, to the intellectuals of the Enlightenment, the task of having to search for a new criteria which would measure standards of truth (ibid.: 194). It was a time of anxiety and insecurity (Bordo, 1986: 440). Europe was emerging from the dens of the Dark Ages and the medieval era, when the church and superstition dominated life (Mason, 1993: 35). The religious crisis of the sixteenth and seventeenth centuries altered the assumptions of the old conceptual structure so much, that, an intellectual vacancy was formed and a space for the discussion of science forged. Science had to discuss such large issues as the relationship of man and nature, the possibilities of knowing the external world and the best way to organise that knowledge (Outram, 1995: 48). Natural philosophers saw nature as an expression of God's ordering hand, but an order that obeys natural laws that men could acknowledge (Kramnik, 1995: xii). The task was to find the method that would enable them to know nature: science. But gradually this discipline separated itself from the theological context. Science embodied the central Enlightenment value of rationality by developing a practice which claimed to be based in an 'objective thinking, without emotions, prejudice or superstition and without reference to non-verifiable statements' (Outram, 1995: 48). Science has been regarded since the Enlightenment ‘as the highest expression of man’s rationality’ (Hekman, 1990:107)

The dichotomy of culture/nature and the association of man with culture and woman with nature have been manifested since the early stages of western thought (Hekman, 1990: 111). This association is not an isolated phenomenon, but closely related the identification of woman as emotional and irrational and therefore ‘barred from the realm of knowledge in general’ and from the realm of science
in particular (Hekman, 1990: 107). The dichotomy between nature and culture, like others, is not unique to the Enlightenment thought, but an ancient one, which has been traced back to the birth of agriculture. However it does not imply that this association is a universal and essential condition of humanity. As this study will explain it has to be understood as an historical phenomenon, a product of particular social forces. Especially strong in the West has been the gender association of nature with women and culture with men as its hierarchical relationship. Some scholars, (Plumwood, 1993; Griffing, 1978; Nietzsche, 1964 in ibid.: 111) have traced the nature/culture dichotomy, its gender association and, its uneven relation to the Greeks, and argue that since then this trait has not only continued but strengthened. The rise of modern science effected a change in the conceptualisation of nature that not only reinforced the connection between woman and nature and separation of the man, which already existed, but radically altered it. It is important to look at the change of meaning that the Enlightenment effected in the association between woman and nature, to understand its implications in contemporary society. Carolyn Merchant, studied these conceptual changes thorough the analysis of the metaphorical connections between woman and nature in the language of the Scientific Revolution of the Enlightenment.

Merchant argues in her book The Death of Nature (1980) that in the earlier Judeo-Christian doctrine, which had ruled over Europe for over a thousand years, there already existed domination over nature and women, but the emergence of scientific rationality was the final twist that released the full destructive potential of Western patriarchal culture. The development of modern science allowed that the already existing Judeo-Christian desire to recover man’s lost dominion over the universe, materialised, specially over nature (ibid.: 170). Although nature, in the western tradition, has traditionally been described feminine, her characterizations have changed along history and more dramatically with the birth of science (Hekman, 1990: 113). Before the Enlightenment, nature was feared as a wild, mysterious spirit of a temptress but also revered as a nurturing mother; it was conceptualised as both alive and female, and in this way associated to women (ibid.: 113). ‘This two sided image generated opposing attitudes towards nature’: on one hand, nature seen as a source of life forged a cultural attitude of respect which constrained her abusive exploitation, and on the other hand, the image of nature as a wild force cultivated a social ‘desire to tame her excesses, to control her power’ (ibid.: 113). Nevertheless, the most influential characteristic of this double image is its organic quality, because it was constructed by, from
and through experiencing nature itself (ibid.: 114).

In the early modern period, the competitive practices of the new commercialism, the religious wars and the growing stress on individualism caused a break-up of the old order that had ruled western Europe. This was a period of challenging the old ideas and organisation structures and of articulating new ones, therefore 'also a period of uncertainty and anxiety' (Merchant, 1980: 125). The construction of a new modern scientific system of organisation required the disintegration of the previous understanding of the cosmos as an organism. The re-construction of the 'cosmos, society and the self', which shaped the new understanding of them, was achieved 'in terms of a new metaphor –the machine' (ibid.: 192). The conception of nature as a female organism to be both feared and loved, gradually changed, and a new mechanical conception of nature emerged. The change from the organic conception of nature was carried out through an excessive emphasis given to the wild side of nature, with no mention of a nurturing Mother Earth, which brought about the dispassionate desire to control nature. This conceptual construction rejected the vitalistic and animistic ideas of nature enhanced in the Renaissance, on the basis of their association with change, uncertainty and unpredictability, while those ideas related to the passivity and manipulability of nature were welcomed (ibid.: 195). 'The removal of animistic, organic assumptions about the cosmos constituted the death of nature' (ibid.: 193). The organic chaotic view of nature was progressively 'transformed into a mechanistically conceived universe' that could be understood by human's rationality and therefore should be controlled by scientists (Hekman, 1990: 114). The universe became a colder, more impersonal place, governed not by divine arrangement and intercession but by precisely mathematically expressed physical laws. The death of nature as a living and growing organism permitted the ability of rationality to understand the now machine-like nature. Rational knowledge of the external world would allow men to manipulate and dominate the wildness of the now dead nature in order to apparently favour these new super-humans who now, thanks to their rationality, can stand beyond nature. This is the rise of modern science that by the end of the eighteenth Century had established itself as the new order.

"It is impossible to imagine the heights to which we may be carried in a hundred years, the power of man over matter [...]. All diseases may by sure means be prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard" (Franklin, 1780 in Kramnick, 1995: 74).
Although the pre-modern image of an untamed wild nature promoted a desire for control, it differed from the desire generated in the modern era because the former image still regarded nature as an organism and therefore as a source of life to which humans were linked, while the later mechanistic view sees nature as 'passive and subject to domination' (Hekman, 1990:114). This conception of nature had a clear effect in women who were seen as closer to nature than men because of their physiological functions of reproduction, nurturing and childbearing. In this way, women and their social roles were now 'naturally' placed within the realm of nature and therefore in a lower level than men and culture (Merchant, 1980: 144). This is the establishment of the new natural order which will rule western Europe and expand to much of the world through the colonial expansion. The new conception of nature, and of women, fostered by the rise of science, was to have major implications in the development of modernity and especially in the conceptualisation of the relationship between the man of culture and the natural world he sought to dominate; the nature/culture dichotomy. The logic of domination is built into science- our current day global crises are not there through the abuse of science but are embedded in the methodology itself.

Susan J. Hekman explains, in Gender and Knowledge (1990: 114-7), the new modern attitude developed in the Enlightenment towards nature through the work of Francis Bacon (1561-1626). She analyses his writing because 'his language, style, nuance and metaphor become a mirror reflecting his [middle] class perspective' (Merchant, 1980: 165). Hekman argues Bacon wanted to "establish a 'New Philosophy' that would inaugurate the 'Masculine Birth of Time'" (Bacon, 1964: 92 in Hekman, 1990: 114). It should be noted that Bacon, as Lord Chancellor, had, for three years, presided over Britain's witch-hunting courts (Mason, 1993: 227) and so, from an ecofeminist perspective, it comes as no surprise that after putting women on "the rack" he moved onto nature itself. Hekman points out from his writings, first, that he defined nature as a machine' and science as the tool with which its mechanism 'must be exposed and understood' (1990: 115). Similarly, Merchant argues that his writings are the use of 'the power of language as political instrument in reducing nature to a resource for economic production' (1980: 165). Secondly, that through the use of sexual metaphors, he does not only identify nature as female and science and the scientists as male, but establishes a relation of domination between the two. Some examples are: 'Nature herself, in great part, nay, in her best part, is despised by man'; 'Nature must be taken by the fore lock, being bold behind'; 'I am come in very truth to lead you to Nature with all her children to bind her to your service and make her your slave'
(Bacon 1964: 120; 130; 62 in Hekman, 1990: 115). These metaphors generate a gendered association of the scientist or knower subject as male and of nature or known object as female, as well as a hierarchical relationship between the two where the male is active and superior and the female passive and inferior. Bacon's conceptualisation of the union to nature swings from a rape of nature to a legal marriage, but basic to both is the key feature of modern science, to dominate and constrain nature, to dissect her by hand and mind and to penetrate her hidden secrets (Hekman, 1990:115-6):

This scientific method of study is based on the interrogation of nature, not through abstract notions as the Greeks had enquired, but through empirical experimentation where nature is forced out of her natural state to create something new and artificial (Merchant, 1980: 172). The new scientific agenda of Bacon was to shift the primary focus of scientific attention away from contemplatively perceived truth to the goal of mastery over nature (Tiles, 1987: 227). Natural knowledge was now to be sought and valued to the extent that it conferred the ability to dominate and control, an expression and fulfillment of a distinctly human potential. 'Nature takes orders from man and works under his authority' (Bacon, 1870: 343 in Merchant, 1980: 171). Man-made experimental situations and dissections were to be the new source of knowledge rather than one of observation of naturally occurring phenomenon. Through his engagement and interference with the natural world Man would be able to exhibit his superiority - a pitiful indication, not of Man's power but of his neurosis. Bacon transformed the magical tradition which saw nature as a teacher and which induced constraints against penetrating, too deeply, into her secrets into a philosophy which considered nature a slave and which sustained sanctions in language that justified her exploitation for human good. This new image of nature legitimated the exploitation, mastery and domination of 'natural resources' (Merchant, 1980: 189). And so here Bacon takes biblical dominion one step further - now, it was not only permissible to subdue nature but desirable (Mason, 1993: 37). This sanctioning of the pursuit of personal and national gain as well as the old biblical pursuit of power and dominion over, in Bacon's words the 'universe of things', was music to the ears of the colonial powers and subsequent industrialists (ibid.: 37).

This conceptualization of nature did not only construct a new characterization of the female that required control, but also formed a new conception of the male: 'the man of science [...], who must prove his virility by penetrating the secrets of nature' (Hekman, 1990: 116). The new definition of manhood is constructed
in opposition and superiority to everything female: he is master, active and instrumental; she is slave, passive and futile (ibid.:116). These new conceptions of nature, women and men profoundly changed the treatment of nature and of women in modern science and by extension in society, economy, politics. But above all, what fundamentally differentiates these gendered concepts, is that while the male is rational and capable of repressing feelings, the female is emotional and devoid of reason. The scientist and science are divorced from feelings and matched exclusively with reason. This emerging mechanical philosophy created a male world because all the qualities associated with the female, nurturing, mystery, intuition, emotions and so on were effectively removed from our conceptual understanding. 

'Reinforcing the mechanical view of nature that was developing in the natural science was the rise of Cartesian rationalism in philosophy' which will be explored in more detail over the next chapter (Hekman, 1990:117).

4. THE MASCULINE RE-BIRTH OF HUMANS AND RATIONALISM

Bacon had formulated a new and easily secularized concept of mastering nature, which could survive the ever-decreasing cultural impact of religion. At about the time of his death another man, a French philosopher named René Descartes (1596-1650), stepped into the picture. In this dissertation Bacon could be labeled "the rapist", as he advocated the probing into and uncovering of nature's secrets whereas Descartes is "the murderer" - and, indeed, the "decapitator". He constructed a mechanical philosophy that ultimately presented a solution to the problem of certainty, social stability and individual responsibility' (Merchant, 1980: 194). Descartes solution was to sever any connection between man and nature and to place an absolute gap between them. He cut humanity loose from the rest of nature by reclassifying other living things as insensible, soulless machines. Everything that consisted of matter was governed by mechanistic principles.

He was able to escape the unpalatable and heretical view that man, too, is a machine by incorporating the Christian dogmatic view that humans alone had a soul, which he identified with consciousness. Influenced by the ancient Greek philosophers, and the Christian context of the time, he devised criteria for truth and certainty in scientific rational knowledge, an episteme 'based on clarity, dispassion and detachment' (Bordo, 1986: 440). He presupposed that the free and unconditional will and intellect of God created a body of eternal truths, which were intelligible and accessible to the human intellect, solving thus the problem of certainty (Merchant, 1980: 203). This was the death of mystery. Descartes argued that ideas as clear and distinct as geometrical
figures or mathematical models of the world were the basis to find out the universal true essence behind the mysterious appearance of nature. Because clear and distinct ideas can be formed in the mind it was argued that rational knowledge holds the key to truth and certainty.

Merchant explains, how with this new mechanistic view, Descartes pretended 'to describe the entire universe - the human body, the physical surrounding and the larger cosmos' (1980: 204). In *Principia Philosophiae*, he reconstructed the whole cosmos in the form of a lifeless machine combusted not by its own vitality but by an external divine force, in his treatise *L'Homme*, the human body is analysed in terms of this new machine metaphor, as it was the physical world in the mechanical treatise of *Le Monde* (Merchant, 1980: 204). This argumentation conceptualises mind and rationality as superior to everything, in the sense that they show to be capable of understanding the whole universe, and therefore not only capable but on the right to control it. All the spiritual mysteries 'were effectively removed from nature' and all the emotions and mysticism from the body (ibid.: 204). The death of nature was finally declared and it gave way to the new dominant philosophic and scientific culture as Francis Bacon had already proclaimed the masculine birth of an era with no limits or restrictions:

"No qualities are known which are so occult and no effects of sympathy and antipathy so marvelous and strange, and finally nothing else in nature so rare (provided it proceeds entirely from purely material causes lacking in thought or free will) for which the reason cannot be given by means of the same principle" (Descartes, *Principia Philosophiae*: vol., part 4, p.309, as seen in Merchant, 1980: 205).

Descartes presented a charter of freedom for the new scientists by blowing away any remaining hesitation, timidity or remorse they may have had after joining Bacon's invitation to 'lay hold and capture her' (1964:130 in Hekman, 1990: 115). An example of this is the rapid rise in the practice of experimenting on live animals that took place in the late seventeenth century as carried out by self-professed Cartesians and mechanists (Mason, 1996: 36). Animals were, after all, nothing but machines. Descartes decreed that 'the reason why animals do not speak as we do is not that they lack the organs but that they have no thoughts' and he dismissed the cries, screams and yelps of the dogs he tortured as no more than the mechanical reaction of clock-like automata (Masson, 1996: 33). Descartes, the founder of rationalism, saw no mystery in the universe or cruelty in the animal laboratory. The wisdom and knowledge of the primal old, earth based, animistic
religions, that, by means of quiet subterfuge and subversion, had only just barely managed to survive, after century, upon century, of masculine mono-theistic persecution was finally killed off by the scalpel of Descartes - mother nature was decapitated and the only people present to hear the screams had become deaf.

Even though Descartes is credited as being one of the fathers of modern science the vast majority of his work, except for some pure mathematics and geometry, was rubbished by his contemporaries and later scientists. Voltaire described Newton as ‘the destroyer of the Cartesian system’ (1733 in Kramnick, 1995: 56) as, one by one, Descartes findings were dismissed. So why then does his legacy, his methodology, still live on? It is argued here that the dispassionate method that he advocated was so eagerly accepted, by the pioneers of modernity, not because of its effectiveness in reaching accurate results but because of its suitability in the continuance of Bacon's proposal to subdue nature without any sense of remorse.

'I think therefore I am' is the epigram that he is best remembered for, indeed, it is the epitome of Descartes' subject-centred, mechanistic philosophy. Unlike the organic individual who felt as a microcosm within the macrocosm, he identified the rational knowing subject with the source of all possible certainty, and by extension, turned that which is not a subject into an external object, a machine. In this way, Descartes placed the so pursued certainty, which was meant to bring security to the modern epistemology, firmly within man himself, who became the self-conscious guarantor of all knowledge (Hekman, 1990: 62). The subjective mind detached itself from the objective world and started to understand itself as an inner space, separated from the body and the external world, but, 'at the same time, capable of objectivation and examination' (Bordo, 1986: 443). However, this objectification of the world is not more than a conceptual construction, as it is the subjectification of the mind (Rogers, 1996: 4). The world was effectively objectified by devoiding it of mysterious, organic and sensuous forces that the intellect would not be able to understand. 'The world became an it. The subject became an I' (Rogers, 1996: 4). Bordo metaphorically describes the conceptual framework constructed during the Enlightenment with a masculine cultural re-birth of hu-mans, who emerged as decisively separated entities and no longer continuous with the external world (1986: 451). This is not a 'biological category' of masculinity or of birth, but a epistemological position, where that which lacks - mind, subjectivity, rationality - is not only categorised as 'feminine' but dismissed (1986: 451). She parallels this conceptual separation of the mind from the body with the
separation that the child effects from the mother during the Oedipal crisis at the time when his/her identity is formed. This parallelism helps to understand the gender aspects of this conceptual construction. In this 'psychological birth', while the mind of the subject becomes the source that shape his/her identity, its body and the object world around, representing the mother, becomes distant and unfamiliar (ibid.: 444). 'The modern project of growing up is a project of learning to deal with the fact that mother and child are no longer one', that nature and humans are not part of each other (ibid.: 451). The scientific revolution is, in psychoanalytical terms, a period of self-induced self-consciousness; as the images of cosmic unity breakdown, anxieties about the distance between the self and the world grow.

Bordo argues that the modern way to deal with this separation is one where the pain of losing the mother is concealed by constructing a self that denies her, all she represents and its dependency on her (ibid.: 451). This is a form of separation that appears to the subject as consciously chosen and which therefore offers the child the possibility of mastering and controlling the one, with which the self had once shared its soul, body and nature (ibid.: 452). Keller puts it in terms of the (male) child achieving his final security by the identification with the father (culture) -an identification involving simultaneously a denial of the mother (nature) and a transformation of guilt and fear into aggression (1982: 35). Indeed, this process can be mirrored in the life of Descartes, himself, who committed acts of extreme violence towards animals, in the name of science, whilst living the life, as charted by Voltaire, of a lonely, homeless, friendless exile (Voltaire, 1733 in Kramnick, 1995: 57). For Descartes the embodiment of the self and its embeddedness in nature represented an epistemological threat because such a condition did not offer the possibility to distinguish and separate between the inner occurrence and the external event, like the child with the mother. Descartes re-constructed the symbiotic relationship of the self with nature and with its body and re-defined them in opposition to each other through the human/nature and mind/body dualism where some interaction may occur but never a re-union. This ‘mutual exclusion [...] made possible the conceptualization of complete intellectual transcendence of the body’ and ‘established the utter diremption –detachment, dislocation- of the natural world from the realm of the human’ (Bordo, 1986: 450). From now on, the value of nature (and everything else 'out there') is given in relation to the superior realm of humanity, never by its intrinsic qualities (ibid.: 450). These words are mirrored in the words of Stephen Clark where he states that '[t]hose who attempt the Cartesian epoch (disconnecting our primitive belief that the world outside us
really exists) will find that in eliminating world, and friends and body they have also lost themselves' (1984: 46).

The masculine discourse of scientific knowledge is placed at the disposal of the subject to reveal the relationship between the objects in the external world, which is devoid of mind and thought. This model of knowledge rejects both the body's forms of knowing, its sensual and emotional responses, and the integration of the subject with the object, either spiritually or personally (Bordo, 1986: 450). These forms of knowing are not only devalued but attributed to women and associated with the conceptual female. Scientific study is based on ‘measurements rather than sympathy’ (ibid.: 450). The subject, cut off from the ‘female universe’, rejects the ‘feminine’ elements previously included in the conception of knowledge, such as merging with the known object, bodily identification, emotional attachment (ibid.: 451). This masculine construction of knowledge relies ‘on a clear and distinct determination of the boundaries between the self and the world’ (ibid.: 451). Evelyn Fox Keller expresses the same idea:

"The scientific mind is set apart from what is to be known, that is, from nature, and its autonomy —and hence the reciprocal autonomy of the object— is guaranteed (or so it has had traditionally been assumed) by setting apart its modes of knowing from those in which that dichotomy is threatened. In this process, the characterisation of both the scientific mind and its modes of knowing as masculine are indeed significant. Masculine here connotes, as it often does, autonomy, separation, and distance. It connotes a radical rejection of any commingling of subject and object, which are, it now appears, quite consistently identified as male and female" (1985: 79).

Cartesian objectivism denies the ‘feminine sensuous’ part that constitutes both the external world and knowledge itself. It orders the world scientifically by constructing it as separated from the subject, leading towards objective realism. Its epistemological egoism relies on the representation of rationalism as the superior, universal and certain episteme and it leads to subjective idealism (Rogers: 1996: 4). At this point the idealist/realist dualism is formed and everything is either transformed into objects, including animals, or otherwise, ‘situated outside discourse. Discourse is no longer a creative constituent of being’ (Rogers: 1996: 4).

The subject transcended this world of matter, and used scientific knowledge as the tool for detached study, manipulation and control. From now on ‘knowledge, which is power, knows no obstacles’ and the subject, surrounded by a world of material at his disposal, has no limits (Adorno and Horkeimer, 1944: 4). However, this position which separates objects and subjects, body
and mind, human and nature, is a constructed discourse that can be reconfigured. The contemporary postmodern argument challenges Descartes' theory that there is only one, true method to acquire objective knowledge, and defends an understanding of knowledge as plural, heterogeneous and mutating (Hekman, 1990: 63). It has also been argued that knowledge is not acquired through the artificial separation of the knowing subject from the object, "but, rather, that knowledge, along with subjects and objects, is constituted collectively through forms of discourse" (Hekman, 1990: 63).

Alfred Cobban (1960) suggests, that even from this detached position, life destructive problems, such as the devastation of the rain forest are regarded as harmful and injurious crimes triggering within us strong feelings, due to their inseparable relation to pain, suffering and death (1960: 11). These instinctive feelings should not only be recognised but also regarded as determining factors to identify our major problems. The problem is that within rationalism these reactions are regarded as mere emotional responses of low value.

There is a clear tension between the feelings towards cruel and destructive acts and the rational justification under which they take place but under rationalism it is always the latter that takes precedence. A forest becomes a natural resource, a cow becomes a beef-burger, a starving child becomes an unfortunate casualty of economic mismanagement and an Indian woman who stands up and says "no" to the building of a dam, that will destroy her community, becomes a hysterical luddite. The point of discussion here is that all atrocities can be rationalised, once concepts such as love and compassion have been shelved. It seems that emotional values are not worthy enough to be taken into the account of decision making, as if our actions have to be carried out without paying attention to our feelings. The Enlightenment has been considered as a period which effected an ethical revolution of moral and humane tendencies, resulting from the new rational and empirical appreciation of relevant facts: a systematic and rational theory that assesses whether the pain, suffering and death resulting from processes of society are actually necessary in the interest of some higher end. Due to the work of the empirical utilitarian thinkers in the seventeenth and eighteenth centuries some compassionate institutions were founded to cut down cruelty within society. These moves were to a great extent the result of a disposition to feel disapproval of acts of cruelty, however these feelings, within rationalism, should always be tamed by reason. Abusive practices, once rationalised, could actually be sanctioned. It is in this sense that rationalism can be employed to justify life destructive activities while denying
the emotions attached to them and so the real legacy of the Enlightenment is not the condemnation of cruelty but the justification of it. Anna Kaplan, in her studies into postcolonialism, identifies the very articulation of Universal rights as an eighteenth century western concept which merely perpetuated imperialism (1997: 156). In this sense, it is argued here, that The Holocaust, a mass slaughter of people in the heart of Europe, was an inevitable legacy of the Enlightenment that Bacon, Descartes and other philosophers had helped to form. Adorno and Horkeimer in Dialectic of Enlightenment lamented that ‘the fully enlightened earth radiates disaster triumphant’ and argued that science, rather than being a discipline constructed to improve human conditions and relations ‘proved to contain the seeds of a new form of dehumanization’ (1944: 2 & Jay, 1984: 38). Under the dualistic framework that the Enlightenment perpetuated, Jews, gypsies, homosexuals and "Other" dissidents represented the most drastic image of otherness, opposition and difference within the human western world and therefore they had to be ‘rationally’ annihilated (Jay, 1984: 39). However The Holocaust, it is argued here, represents only one aspect of the many modern crises and it should paralleled with other forms of systematic atrocities towards other non-western humans and other non-humans beings, which are still taking place.

5. CONCLUSION
The previous chapters have attempted to explain how the oppositional and hierarchical relation between nature and culture and the association of woman with nature formed during the Enlightenment, with the rise of modern science, is no more than another man’s constructed conception of himself, his environment and his relation with it, and therefore it can, and should, be changed. The modern conception of the nature/culture dualism is not a universal nor essential one, as it is neither the association of the male with culture and the female with nature; they are historically specific and artificially composed. This view has been expressed by MacCormack & Strathern (1980) who explained that the confrontation between nature and culture and the link between woman and nature are not immutable dogmas determining the relations of society, but historical and cultural associations constructed by white-middleclass-male-westeners to gain global control over nature, women, animals and non-westerns, and rationalism has been the means by which their devaluation and subordination has been justified. The feminist contemporary argument believes that ‘both the rape of nature and the domination of women’ can only be overcome by eradicating ‘the objectification inherent in the masculine epistemology of the modern era’ (Hekman, 1990: 117). Here is where the stage for the connection between
women's liberation movement and ecology movement is set, and from where ecofeminism rises.

Ecofeminist critiques of science have referred to this discipline as a ‘masculinist project’* and as a ‘reductionist’ enterprise because by presenting itself as a universal, value-free and objective episteme, it has consequently ‘displaced all other beliefs and knowledge systems’ which are life sustainable and aim for constructive behavioral practice (Mellor*, 1997: 118 & Shiva, 1989:15). Masculinist science claims to produce disembodied knowledge capable of reflecting and explaining all aspects of nature, but, as Mellor explains, this is ‘a metaphor’ that perpetuates the hierarchical assumption in western culture that humans, by their condition of rational beings, are master interpreters of a subordinated natural world (1997: 119). In fact, the assumption that science is the best and most faithful translator of nature' language, imposes an artificial limit to the development of knowledge, already confined to the realm of reason (ibid.: 119).

"Modern reductionist science, like development, turns out to be a patriarchal project, which has excluded women as experts, and has simultaneously excluded ecological and holistic ways of knowing which understand and respect nature's processes and interconnectedness as science" (Shiva, 1989: 14-15).

Fundamentally, reductionist science is a self-defeating project because by claiming universal control of knowledge and the superiority of scientific knowledge, it only achieves a reductionist frame of mind that denies alternative ways of knowing. Scientific knowledge rejects all embodied ways of knowing by devaluing our body experiences, all feelings and emotions, the power of the imagination and intuition and privileges the exclusive use of reason.

As Merchant explained, during the Enlightenment period, the previous organic view of nature to which pre-modern humans believed to belong was re-constructed into the conceptual understanding of nature as a machine at the disposition of the Man of Reason. But I would like to finally conclude highlighting the global effects that this conceptual replacement has effected not only on the environment but also on social relations. Violence against nature, a major characteristic of our times, has been systematically and profitably executed by destroying its integrity with life and specially with humans, but also violence has been enforced against humans, specially women and tribal people, by excluding them from their position of 'knowers' and their culture from the realm of knowledge (Shiva, 1989: 22). The organic image
of nature sustained social and environmental relationships based on the integration of similitude and the complementation of differences, while the mechanical view of nature, promotes relationship of domination based on the assumption that differences verify disconnection and hierarchy. Shiva argues that the modern way of understanding nature, science, does not only ‘reduce the capacity of humans to know nature both by excluding other knowers and other ways of knowing’ but also reduces ‘the capacity of nature to creatively regenerate and renew itself by manipulating it as inert and fragmented matter’ (1989: 22)

In Ecofeminism (1993), a book written by Maria Mies and Vandana Shiva, the direct relationship between reductionist science, colonization, patriarchy and capitalism is explained. In accordance with Bordo’s psychoanalytical study, they have related the violence of western science toward nature with the conceptual representation of man above and separate of his embeddedness in nature, negating their symbiotic relationship with Mother-earth:

"In order to be able to do violence to Mother Earth and other sister beings on earth, homo-scientificus had to set himself apart from, or rather above, nature [...]. The modern scientist is the man who presumably creates nature as well as himself out of his brain power. He is the new god, the culture hero of European civilisation". (ibid.: 47).

The new description of humans as separate and autonomous beings upholds that the wonder of humanity can only be fully conquered by ‘processes of emancipation and processes of liberation’ from nature (ibid.: 47). And this view settled the ground for the systematic abusive practices that followed the Enlightenment: oppressive forms of colonialism, destructive ways of industrialism, endless consumerism and so on.

It is the duty of current critics, such as ecofeminist or postmodernist, to construct an alternative conceptual framework which, is not based on value dualisms, as these only encourage patterns of domination, but also one which does not impose a universal or essential understanding of the world. In our postmodern era we aim for an understanding of the self and the world in terms of mutating constructions.

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