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# Nature, Gender and Technology: The Ontological Foundations of Shiva's Ecofeminist Philosophy

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## ABSTRACT

This paper addresses the generally neglected topic of Vandana Shiva's ontology. It is argued that there is a significant ontological component to Shiva's ecofeminist philosophy and that this ontology underpins her ecological and feminist views. Shiva's ontology provides a standpoint from which she can critique dichotomous ontologies of domination and oppression, and from which she can identify life-sustaining modes of existence. It is argued that this ontology is implicit in most of her works and is best grasped through the analysis of her critique of Western scientific metaphysics. It is further argued that this implied ontology is a continuation of the Hindu-ecofeminist ontology of Prakriti explicitly set forth in Shiva's *Staying Alive* (1989). Both forms of Shiva's ontology, the explicit and the implicit, will be reconstructed and their points of continuity detailed.

## KEYWORDS

Vandana Shiva; ontology; Prakriti; technology; ecofeminism; reductionism

## Introduction

Vandana Shiva is best known as an environmental activist and radical scientist. To date she has produced a sizeable amount of work on topics such as biodiversity, environmental degradation, the epistemological violence of Western science, and feminism as ecology. All these works reflect Shiva's commitment to ecofeminism, a philosophical position that stresses the necessary interconnectedness of the oppression of women and the oppression of nature, and thereby the necessary interconnectedness of their respective liberation. Unlike some other ecofeminists, Shiva argues that this connection between women and nature is not a biological given but is rather a social construct. The subordinate status of women and nature is not to be viewed as in any sense "natural" but rather as a contingent state of affairs subject to continuous ideological reinforcement in order to maintain the repressive functions of capitalist, patriarchal society. Given the contingency of the status of women and nature in technological modernity, Shiva argues that it is open to liberatory transformation through the critique of repressive ideologies and conceptual dichotomies, and through the adoption of what Shiva terms the *subsistence perspective*, an alteration of praxis and theory derived from the survival activities of grassroots movements intended to enable the universalization of human freedom *within* the limits of sustainability (Mies and Shiva 1993, 8; 318–322).

In a recent paper in this journal, Tamari suggests that while Shiva's work on maldevelopment, biodiversity, and the links between culture and nature offers "insights" into a more humane way of approaching nature, it is deficient in that it lacks a "philosophical foundation" (Tamari 2010, 277). Tamari goes on to specify the nature of this deficiency in more detail:

Shiva is not a philosopher and she provides no ontology of human existence which could counter the domineering rationalism embraced by the princes of corporate capitalism. Furthermore, Shiva herself sometimes utilizes capitalistic approaches to describe reality. Shiva teaches that a responsible attitude toward nature requires one to question the basic assumptions of his or her culture. Hence it is necessary to question what desirable and virtuous human behavior means, how it is influenced by the environment, and how it influences in return. I hold that Shiva has only begun moving in the right direction because she has left some of the more difficult questions untouched. (Tamari 2010, 277–8)

To remedy this philosophical deficiency Tamari suggests buttressing/improving Shiva's analysis with the ontology of Merleau-Ponty.<sup>1</sup>

While I take issue with most of the claims made in the above quotation, I intend to focus on Tamari's central claim, namely, that Shiva's work lacks an ontology.<sup>2</sup> This paper argues that there is a strong ontological component to Vandana Shiva's ecofeminist philosophy and that an understanding of Shiva's ontological views is vital to grasping the full import of her ecological-feminist outlook. Though this paper will argue that Tamari's assertion regarding the absence of ontology in Shiva's work is mistaken, it does have the benefit of drawing our attention to the absence of discussion about Shiva's ontology in the secondary commentary on her work.<sup>3</sup> Most secondary commentators, I suggest, have tended to focus on the *application* of Shiva's philosophy to environmental and feminist concerns. However, the priority placed upon practical applications of Shiva's thought does not in and of itself entail that there is a lack of theory accompanying Shiva's praxis.

This paper will address Shiva's ontology in two ways. First, it will argue that Shiva's ontology is implicit in the majority of her ecological-feminist writings from the 1990s onwards, including the works that Tamari references.<sup>4</sup> In these works Shiva addresses ontological issues on two distinct yet related levels: she critiques the idea or representation of metaphysics in western society; and she advances a radical characterization of the nature of reality itself. Shiva's views on both levels will be reconstructed and outlined. It will be argued that her analysis regarding representations, with its insistence on the social construction of metaphysical representations, bears close similarities to social constructionism. Shiva's position regarding the characterization of the nature of reality is harder to articulate and thereby more difficult to identify with any other school of thought.<sup>5</sup> In a second consideration, this paper will argue that the implicit ontological

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<sup>1</sup>I take no issue here with Tamari's suggestion that Merleau-Ponty's ontology is particularly compatible with Shiva's philosophy, only with her claim that Shiva lacks an ontology in the first place.

<sup>2</sup>I find Tamari's claim that Shiva is not a philosopher to be particularly puzzling. If one were being charitable, one might interpret this as a normative claim by Tamari, that the four works by Shiva that Tamari references do not merit the designation "philosophy." Even if this were the case, this still ignores Shiva's earlier work in the philosophy of science (Bub and Shiva 1978; Shiva 1980).

<sup>3</sup>See for instance Gardner (2006, 213–215), McHugh (2007, 129–131), Tong (2009, 262–265).

<sup>4</sup>These are Shiva (1993, 1997a, 1997b, 1999).

<sup>5</sup>While this position does have parallels to the constructionist view that scientific facts are socially constructed rather than simply "found" in Nature, its emphasis on the role of technology in world-making brings it closer to the views found in the later work of Martin Heidegger (Swier 2008).

position in Shiva's various works from the 1990s onward is a direct continuation of the ontological position she *explicitly* details in one of her earlier works, *Staying Alive* (1989), in which she articulates a Hindu-ecofeminist ontology of nature. In other words, this essay will demonstrate that Shiva's philosophy has a fully developed ontology of its own.

## Prakriti and the Feminine Principle

In *Staying Alive*, Shiva sets out the positive account of the ontology of nature that underpins her philosophical oeuvre. Shiva proposes, as an alternative to the reductionist theory and praxis of modern technoscience, what she terms the feminine principle, a way of being and knowing that derives from a recognition of nature as a vast relational web as opposed to passive matter. She describes the feminine principle as:

an oppositional category of non-violent ways of conceiving the world, and of acting in it to sustain all life by maintaining the inter-connectedness and diversity of nature. It allows an ecological transition from violence to non-violence, from destruction to creativity, from anti-life to life-giving processes, from uniformity to diversity and from fragmentation and reductionism to holism and complexity. (Shiva 1989, 14)

The feminine principle encapsulates both a cosmological/theological view of nature as something living and sacred, and the forms of activity carried out by those marginalized groups which enable the continuation of all life, human or non-human. For Shiva the feminine principle stands as both a point from which to critique the "rationality" of Western science and the interests of the capitalist-patriarchy that it serves, and as a source of life-centered forms of praxis, epistemology, and spirituality that can serve as alternatives to the reductionist model of reality.

As an exemplar of the feminine principle in an Indian context, Shiva puts forward *Prakriti*, the productive feminine force of Indian cosmology.<sup>6</sup> She states that

The everyday struggles of women for the protection of nature take place in the cognitive and ethical context of the categories of the ancient Indian world-view in which nature is Prakriti, a living and creative process, the feminine principle from which all life arises. (Shiva 1989, xviii)

Prakriti, Shiva argues, represents unity in diversity, a recognition of the interrelatedness and complementarity of all things, both conscious and non-conscious. Its revival offers a non-technological alternative to both the resolution of the current ecological crisis and the liberation of Indian women, in that it articulates an ontology of human existence that calls forth an ethical way of life within the limits and with respect for the integrity of the interrelational web of nature (Garrity-Bond 2018, 188). In contrast to the dichotomous scientific metaphysics that portray nature as passive, separate from, and subject to the will of the (male) human, Shiva claims that

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<sup>6</sup>Lest it be thought that Shiva's identification of the feminine principle with Hindu cosmology is parochial or exclusionary, it should be noted that Shiva holds that the feminine principle is universal rather than a unique possession of Indian citizens. She argues that one finds in the histories of the worldviews of all cultures "an ontology of the feminine as the living principle, and ... an ontological continuity between society and nature – the humanisation of nature and the naturalisation of society" (Shiva 1989, 41). So, each culture has its own iteration of the feminine principle to retrieve, and consequently the form that the principle takes will vary from culture to culture. Thus, Shiva's account of the feminine principle as Prakriti should be viewed as the form of the feminine principle appropriate to the Indian context on which she focuses.

The nature of Nature as Prakriti is activity *and* diversity. ... Nature as a creative expression of the feminine principle is both in ontological continuity with humans as well as above them. Ontologically, there is no divide between man and nature, or between man and woman, because life in all its forms arises from the feminine principle. (Shiva 1989, 39–40)

Prakriti as Nature and feminine principle erases the dualities between man and nature/woman in favor of a “dialectical unity [and] ... diversity within a unifying principle,” which in turn can form the foundation for forms of ecological thought and action in India that prohibit domination and exploitation (Shiva 1989, 40).

This, in capsule form, represents the ontological basis of Shiva’s philosophy. The bulk of Shiva’s writings, I suggest, can be viewed as derived from her account of the feminine principle. Prakriti as Nature provides Shiva with a standpoint from which she can critique dichotomous ontologies of domination and oppression, and from which she can identify modes of existence in accord with the feminine principle. For the purposes of this paper, an elaboration of Shiva’s ontological views, I will focus on the former as providing the best means of fleshing out the details of the ontology so broadly sketched above. More specifically, I shall concentrate on Shiva’s critique of Western scientific metaphysics.<sup>7</sup>

## Two Levels of Ontological Analysis

Shiva’s work addresses metaphysical issues at two levels. Her first and primary concern is with metaphysics as a representation of reality. Shiva views modern scientific metaphysics as the deliberately crafted instrument of a capitalistic-patriarchal power structure. She states that

the dominant stream of modern science, the reductionist or mechanical paradigm, is a particular response of a particular group of people. It is a specific project of western man which came into being during the fifteenth and seventeenth centuries as the much-acclaimed Scientific Revolution, ... a masculine and patriarchal project which necessarily entailed the subjugation of both nature and women. (Shiva 1989, 15)

Her ecofeminist critique is primarily directed at this level of metaphysical representation. I suggest that Shiva’s intentions here are twofold. First, she aims to cast doubt on the claim that what she terms the “reductionist” scientific worldview is an accurate representation of reality; and secondly, she wishes to reveal the role that this worldview plays in the oppression of women and the natural environment. The combined function of this metaphysical critique is to suggest that the present reductionist scientific metaphysical representation be rejected and a more veridical one put in its place. To this end, Shiva presents us with Nature as Prakriti, an alternative metaphysical picture which she feels is a more accurate representation of reality.

Shiva argues that “the reductionist world-view, the industrial revolution and the capitalist economy were the philosophical, technological and economic components of the

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<sup>7</sup>Shiva plays somewhat loose with her definitions of science and technology. She states that “today ... science and technology have become cognitively inseparable and the amalgam has been incorporated into the scientific military industrial complex of capitalist patriarchy” (Shiva 1989, 29). Thus, science and technology are not to be differentiated into the categories of knowledge and its application but, given their interdependence, should be viewed as “technoscience.” That said, when Shiva uses the term “science,” she tends to refer to science as the metaphysics, ideology or practice of science, while “technology” tends to refer to artifacts. I intend to explore Shiva’s analysis of technology and its debt to the philosophy of science in a subsequent paper.

same process” (Shiva 1989, 23). As such, the reductionist scientific worldview is a response to the economic and technological needs of a European social elite rather than to the reality of natural processes. Consequently, Shiva indicates, modern scientific metaphysics should be viewed as a social construct. By this she does not mean simply that science is an enterprise conducted by a society of scientists and that any representation of nature has been drawn up by that society. She states that “the ‘facts’ of reductionist science are socially constructed categories which have the cultural markings of the western bourgeois, patriarchal system which is their context of discovery and justification” (Shiva 1989, 27). In other words, the metaphysical representation of nature proposed by modern science has been constructed in such a way that societal influences and concerns have played a determining role in the content of that metaphysics rather than, or even at the expense of, the actual facts of the metaphysical matter.

On the face of it, this appears to be a relatively straightforward matter in which Shiva identifies a falsified model of reality and offers a true representation, that is, an ecofeminist one, in its place. However, several problems arise at this point. First, Shiva points to the methodology of ecology as providing a more accurate picture of reality. However, as she describes that ecological method of analyzing phenomena, it would appear that this method, too, constructs phenomena as much as finds them. She states that

ecology perceives relationships between different elements of an ecosystem: what properties will be selected for a particular resource element will depend on what relationships are taken as the context defining the properties. The context is fixed by priorities and values guiding the perception of nature. Selection of the context is a value determined process and the selection in turn determines what properties are seen. There is nothing like a neutral fact about nature *independent of the value determined by human cognitive and economic activity*. Properties perceived in nature will depend on how one looks and how one looks depends on the economic interest one has in the resources of nature. (Shiva 1989, 28)

In other words, it appears that ecology’s representations, much like those of scientific metaphysics, are also socially constructed in such a way that the phenomena under study do not entirely constrain the accompanying representation of that phenomena.

Further difficulties occur in Shiva’s account of her proposed alternative metaphysical picture. Shiva, in most of her work, is somewhat hazy about what, exactly, reality is supposed to be like in an ecofeminist account, other than to say that it is holistic, organic rather than mechanical in function, active rather than passive in essence, and so forth. However, from her claims about the nature and particularly the effects of the current scientific metaphysical picture, it is possible to construct an idea of what reality must “really” be like for her claims to be true. If one holds Shiva’s arguments about the negative environmental consequences of modern technology to be true, it appears that Shiva considers it the case that technology constructs reality. That is to say, through the mediation of technology, one reifies a metaphysical representation of reality. Shiva is arguing not only that metaphysical representations of reality are socially constructed but that reality itself is constructible. Thus, it appears to be the case that Shiva’s critique of modern science and technology commits her to the view that metaphysical reality can be socially constructed. The ways in which Shiva feels that this construction takes place and the resulting idea of reality that we arrive at will here be reconstructed and analyzed. Furthermore, it will be demonstrated how the conception of reality that Shiva holds is compatible with the ecofeminist worldview that Shiva wishes to promote.

## The Nature and Function of Modern Scientific Metaphysics

Shiva argues that modern science has constructed and perpetuated a particular metaphysical picture of the world with a set of specific characteristics that set it apart from alternative worldviews that it has either superseded or displaced. She defines this worldview as both reductionist and mechanistic. She argues that “the ontological ... assumptions of reductionism are based on homogeneity. It sees all systems as made up of the same basic constituents, discrete, unrelated and atomistic, and it assumes all basic processes to be mechanical” (Shiva 1989, 22). That is to say, the metaphysical picture of modern science represents all processes and entities as reducible to certain basic components and presents those components as possessing a degree of uniformity and homogeneity. The interaction of these basic components of reality is also assumed to take place in a relatively straightforward casual fashion, with event A causing event B, and so on in a linear manner. Furthermore, modern science also uses the metaphor of the machine as a blueprint for comprehending all processes in nature. This metaphor, Shiva claims, “was based on the assumption of separability and manipulability” (Shiva 1989, 22). In other words, science portrays nature and its processes as an assembly of individual parts rather than a whole. To grasp the essence of any natural process is to isolate the parts involved. This stands in contrast to organic metaphors for the nature of reality “in which concepts of order and power were based on interconnectedness and reciprocity” (Shiva 1989, 22).

For Shiva this reductionist metaphysical picture has two distinct functions: the oppression and exploitation of nature, and the oppression and exploitation of women. Being an ecofeminist, Shiva perceives that these two types of oppression are linked. Both types serve a capitalist-patriarchal power nexus that Shiva argues has achieved dominance in the modern world. The reductionist metaphysics of modern science stem from the reductionist ideology of this capitalist-patriarchal power nexus. By portraying women and all values associated with them as inferior to those that advance the interests of the Western elite, the elite devalues the position of women within society. The lowered status of women enables them to be exploited in a way that serves the economic interests of that elite. By devaluing women, they are able to view and treat women as resources for the capitalist system to exploit. One of the functions of science is to “find” these patriarchal values in nature and thus sanction the continued treatment of women in this way. And so, with nature as with women. Nature too is represented as having no other value than as a resource for the capitalist system. Science then “finds” that nature is such that the only properties it possesses are those that are of utility to capitalist exploitation, thereby justifying its continued treatment as a mere resource.

## Technology as World-Maker

Shiva’s critique of modern science is not limited to its metaphysical representations and their political functions. Shiva also attacks modern science for its role in the deterioration of the environment. Here, although considerable blame is attached to modern scientific metaphysics, Shiva’s focus is largely on the nature and effects of modern technology. Modern technology, for Shiva, is the consequence and ultimately the purpose of modern science. Science, Shiva maintains, portrays nature as inert and open to exploitation. Technology is then created to carry out this project of exploitation. The metaphysical

power of technology, in Shiva's account, lies in its ability to make the metaphysics of science actual. Through the intervention of technology in nature, the metaphysical system proposed by science is imposed on nature and ceases to be a theoretical construct. Nature *becomes* as science describes it.

Shiva's account of a more genuine ecological metaphysics raises some interesting questions concerning the nature of metaphysical representation. Shiva, I have suggested, takes a social constructionist stance regarding the character of scientific metaphysics. The question here is whether she views her own metaphysics as being equally socially constructed or whether she thinks that it somehow tracks the truth of the nature of reality in a way that scientific metaphysics does not.

Shiva looks to the methods of ecology to provide an accurate account of what takes place in scientific practice. Ecology, for Shiva, is the study of the relationships between different elements of an ecosystem. In ecology, she argues, "what properties of a particular element or resource are picked up for study or for understanding nature depends on the relationships that are taken as the context defining the properties" (Shiva 1988, 234). Thus, "the context is determined by the priorities and values guiding the perception of nature" (Shiva 1988, 234). Shiva draws attention here to the particular significance of the frame of reference in the analysis of nature's properties. In ecology, the values of the observer shape the ways in which they frame their study of nature, which in turn shapes the properties that nature then exhibits.

Shiva feels that this point about the determinative force of frames of reference does not apply solely to ecology. Rather she wishes ecology to stand as a model for understanding what takes place in the other sciences. Just as the values brought to an investigation in ecology determine the context of study, so too do the values brought to bear in physics or agricultural science. Shiva further argues that

there is nothing like a neutral fact about nature, independent of the values shaped by human cognitive and economic activity. Properties perceived in nature depend on how you look at them, and how you look at them depends on the economic interest you have in the resources of nature. (Shiva 1988, 234–235)

Aside from returning to the familiar ecofeminist point that the theory and practice of science are driven by the demands of capitalism, Shiva here makes the far-reaching claim that modern science is incapable of producing value-neutral facts. Given that values determine that context of study, and thereby the properties perceived, and given that for Shiva, modern science is thoroughly imbued with the values of patriarchal capitalism, it follows that science is permanently (in its present state at least) prevented from gaining access to the accurate operations of nature. The question that arises here is whether Shiva feels that this problem of the value-ladenness of observation is an inevitable problem for all studies of nature or merely those carried out by modern science. For, if it is the latter, then it would appear to raise the question of whether Shiva or anybody else for that matter can have superior, that is to say truer, knowledge of nature or whether it is the case that all metaphysical representations of nature are likely to be relative in that all are equally value-laden.

Shiva appears to hold that the value-ladenness of the frames of reference is a permanent state of affairs and that, consequently, a full knowledge of the properties of nature is equally impossible, in that the frame of reference will alter the properties that manifest



themselves. Recall her statement that there are no neutral facts about nature. Thus, it would appear that any ecofeminist metaphysics that may be drawn up will itself have value-laden frames of reference which in turn will affect the phenomena under study. The same will apply to any indigenous forms of knowledge that Shiva points to as being better metaphysical models than those provided by modern science. Given that this is the case, one may then ask what reasons there are to prefer an ecofeminist metaphysics to that of modern science. The first that Shiva might offer would appear to be that the values with which ecofeminist or indigenous metaphysics are imbued are better than those found in modern science. Thus, though both result in partial knowledge of the processes of nature, the former is more compatible with an equitable, pluralistic society. The second reason Shiva might offer is based on grounds of scope. An ecofeminist metaphysics might well make manifest only a partial number of phenomena, but it does reveal a greater number of phenomena than are made manifest by reductionist science. That is to say, an ecofeminist metaphysics makes room for many more natural processes than a reductionist model can accommodate.

Let us return for a moment to Shiva's earlier claims about the way in which frames of reference shape the phenomena under study. The discussion above has so far centered on metaphysical representations and their value-ladenness, but the question of how or even if these representations interact with reality has yet to be considered. Shiva argues that the selection of a context determines what properties are seen in nature, and that the context itself is determined by certain values; in the case of modern science, these are those values that are embedded in its metaphysical system, for example. The question is, in what way do representations of reality, through the selection of context, shape the nature of reality itself? Is it the case that the selection of context constitutes the phenomena that manifest themselves, in other words some form of metaphysical constructivism, or is it the case that it merely makes present pre-existing phenomena? The best idea of Shiva's views on these matters comes from her discussion of what takes place in laboratory practice.

Shiva views the controlled experiment in laboratory surroundings to be a key aspect of the methodology of modern science. Indeed, for Shiva, what takes place in laboratory practice explains how it is that reductionist science arrives at its peculiar metaphysical position. Shiva argues that, in the laboratory,

the object of study is arbitrarily isolated from its natural surroundings, from its relationship with other objects and observer(s). The context (the value framework) so provided determines what properties are perceived in nature, and leads to a particular set of beliefs about nature. (Shiva 1988, 236)

Thus, according to Shiva, two events take place in the laboratory. First, reality is altered in that elements of it are removed from their relational field and placed in isolation. Second, the properties manifested by the isolated elements are then observed through the lens of a particular value-system such that only certain of the properties manifested are perceived, and even then, they are only perceived in a certain manner. Namely, in Shiva's account, they are perceived in a way that renders them of utility to capitalist exploitation. So, first, reality is misrepresented in practice through focus on objects in isolation. Then, by viewing the object through a certain metaphysical representation of nature, one perceives only properties that accommodate and reinforce that representation.

However, even though Shiva does seem to argue that nature is altered to bring it into accord with the representations of the reductionist paradigm, her account appears to suggest that those properties thus found do in fact already exist in nature, or rather that natural objects have the capacity to manifest certain properties when removed from their normal relational field and placed in isolation. Confirmation of this can be found in her statement that “looking does not create properties, but it definitely creates conditions for their perception” (Shiva 1988, 235). Thus, the manner in which science, through laboratory practice, explores the world, and the manner in which it perceives and interprets the result of such exploration, may result in a selective and partial account of reality; but it does in some sense latch on to genuine properties in the world. So, while science’s metaphysical representation of reality may be socially constructed, in so far as it contains the values and ideology of the capitalist patriarchy, it would appear that reality itself is not entirely constructed by the practice of science. That is, reality is reordered to conform to the metaphysical expectations of science, but the properties it manifests are in a meaningful sense “found” in nature.

This account of the interaction between metaphysical representation and reality plays a significant part in Shiva’s account of what takes place in development. Shiva, as we have seen, holds that science, through its theoretical representations of nature, serves the interests of a capitalist-patriarchal elite. Science represents nature in such a way as to make it appear passive, malleable, and as such infinitely suitable for exploitation as resources. Now, for Shiva, the role of science in Western society is twofold. Not only does it represent nature as exploitable. It is also required to produce technological devices that enable nature to be exploited. Science thus provides the justification and the means for the exploitation of nature. The question that then arises is how it is possible for technology to operate successfully if the theoretical conception of nature upon which it is based is, to a large part, constructed rather than found in nature.

The answer to this question lies in the role of technology. For Shiva, technology has world-altering, or as I prefer to consider them, world-making powers. Technology acts upon the world to make it correspond to the prescriptions of scientific theory. The dominant scientific paradigm, for Shiva, is one which portrays the world in mechanistic and reductionist terms. Objects are viewed as discrete and uniform and subject to mechanical laws of operation. Nature, Shiva wishes to argue, is better conceived of as a vast relational web with its own regularities and patterns in which such objects are situated. Given that nature is as Shiva describes it, rather than as it is represented by science, it becomes necessary for technology to restructure nature in a state in accordance with the scientific world-view. Having restructured nature, technology is able to operate upon it in accordance with scientific metaphysics, for thus restructured nature does indeed operate in the way that science says it does.

How then are we to understand the way in which this restructuring takes place? Clearly it cannot be the case that, as with Shiva’s example of the operations of the laboratory, that large sections of nature are literally taken into isolation and compelled to manifest properties conducive to a mechanical conception of nature. The answer to this question again lies with the function of technology. According to Shiva, what took place in the Green Revolution was the mixing of technology with nature. Whereas before the Green Revolution, one found the Indian farmer in a web of reciprocal relations with nature in the form of traditional agriculture, after the Green Revolution we find the Indian farmer in an

exploitative relation with an altered form of nature (Shiva 1993, 24–5). Shiva argues that through the use of the technologies of the Green Revolution, technology was inserted into the structure and operations of nature. Certain relations within nature were blocked through the use of technology, and technological substitutes were put in place of many of the components usually found in traditional agriculture. In this way, certain processes of nature were isolated from their usual relational web, and through the intervention of technology, they were compelled to manifest certain properties. Thus, rather than take nature into the laboratory, one blends the laboratory with nature, resulting in a restructured form of reality that conforms to the exploitative metaphysical model of capitalist science – techno-nature.

### **The Nature of Shiva's Ecofeminist Nature**

Reconstructed in this way, the picture of reality that one can draw from Shiva's philosophy raises some interesting questions about the nature of reality. Shiva, as we have seen, to a certain extent endorses the view that reality is socially constructed. This leads one to wonder to what extent, in Shiva's account, one might argue that reality is ontologically subjective? That is to say, to what extent are the structure and processes of nature independent of human construction, and to what extent they are "found" in nature? Shiva appears to argue that nature does have structures and processes independent of human existence. However, at the same time, via her model based on an ecological frame of reference, she appears to argue that certain processes and properties only manifest themselves in response to human perception and manipulation. She also seems to argue, through the idea of techno-nature, that nature, through technological mediation, can produce novel processes and properties, or at least processes and properties not normally found in nature.

Shiva's account of metaphysics indicates considerable interaction between representations of reality and reality itself. Reductionist metaphysics, for Shiva, represents nature in a particular way, as mechanistic, atomic, and so forth. Through the mediation of technology, this representation of reality interacts with reality itself. Nature is perceived as being in such and such a way, and then is manipulated to actually be that way. This new, constructed nature then operates in accordance with the prescriptions of reductionist metaphysics, which in turn verifies and reinforces the metaphysical representation itself.

Given this metaphysical flexibility that nature exhibits, the question then arises concerning the extent of this flexibility. To what extent is nature to be taken as infinitely malleable? Is it the case that, in principle, nature could "bear" any number of technological reconstructions, or is it the case that only certain aspects of nature are amenable to this treatment? Shiva seems to suggest the latter. As evidence for this view we might consider her account of the ecological crises that arose from the Green Revolution, such as the environmental degradation of the Punjab. Here Shiva argues that there are limits to which reality can be manipulated. Beyond these limits, the processes of nature deteriorate and collapse. So, while Shiva holds that nature can be reconstructed, she maintains that there are limits to all such efforts. Thus, reality is not infinitely malleable, and her position does not entail total ontological subjectivism.

However, given that reality is malleable to an extent, a question then arises concerning the extent to which the stability of reality is independent of human intervention. Assuming

with Shiva that reality can be socially constructed to a certain degree, one must ask whether, having been constructed, the new structure of reality can maintain itself. Or to put it another way, whether types of reality like techno-nature are maintained internally or externally? Shiva appears to take the latter position. It is one of her grounds for criticizing the type of nature that modern agricultural technology constructs; namely, she contends that unlike traditional forms of agriculture, modern agriculture must constantly bring new technological inputs (fertilizers, pesticides, and so forth) to techno-nature in order to continue its functioning. Left to its own devices, techno-nature could not sustain itself. It requires technological inputs for its continued existence and, returning to one of Shiva's earlier points, the continued perception of nature in a reductionist manner to maintain itself. In effect, socially constructed techno-nature needs continuous shoring up.

### **Technological Ontology and Ecological Crises**

It is my argument that Shiva's philosophy can be best understood as a critique of technological metaphysics. Shiva argues that the capitalist-patriarchal elites in Western society impose a conceptual schema on nature and society that justifies and furthers their control. This schema tends to dichotomize the world and its contents into two opposing halves, with one part always perceived as superior to the other. In this way society is perceived as better than nature, male better than female, reason better than emotion, and so on. By placing those values that further or maintain the capitalist patriarchal world system higher in the hierarchy of dualisms, it is argued that those values are established as superior values. Conversely, those values that are placed in the lower half of the hierarchy are denigrated and devalued. And thus devalued, they are open to exploitation in ways that serve the capitalist patriarchy. In this way values and structures associated with women or nature and which do not facilitate capitalist values of "progress" and "development" are judged to be either of less value or without value, thereby sanctioning the consequent exploitation of women and nature.

Thus, women and nature become resources for capitalism. Ecofeminists argue that this use of women and nature as resources is necessary for the continued functioning of the capitalist system. So, the economic interests of a capitalist elite not only drive the conceptual devaluation of women and nature, but also create and reinforce material structures of domination and exploitation. Shiva and other ecofeminists believe that the conceptual schema imposed on women and nature is false. They argue that the very notion of a reality in which there exists dualist dichotomies is an erroneous one. Rather than being a reflection of reality, such an ontology is a social construction that reflects instead the interests of an elite. In past times this conceptual reordering of reality has done considerable harm to women and nature in that it has resulted in societal structures that either downplayed or actively opposed their interests. At the present time the focus of ecofeminist critique has shifted, and this shift in focus is due to the advent of modern technology. Now, on one level the reasons for the critique of technology are the same as the general critique of the capitalist patriarchal conceptual system: namely that technology derives from a scientific world view that propagates and reinforces the afore-mentioned conceptual system. However, on a second level, the very nature of modern technology changes matters significantly. Before modern technology, the imposition of the capitalist

patriarchal conceptual system on reality was exactly that, a conceptual imposition, whose impact was felt mainly in terms of societal mores and structures. However, with modern technology, the capitalist patriarchy is given the means not merely to impose their conceptual system on the world, but also to reconfigure the world such that it makes that conceptual system true.

So, for Shiva, the chief danger posed by technology stems from its world-making powers. The capitalist patriarchal elite, through the imposition of their conceptual system, indicate their belief in a radical form of subjectivism in that they believe there are no values intrinsic to nature but those that they themselves bring to it. According to ecofeminism, these values are largely economic in nature. This conceptual system has enabled society to be restructured in a way that has served the economic interests of those elites. And now technology gives them the power to impose their subjective beliefs onto nature itself. Nature is stripped of all value and stands before humanity as an object with only those properties that the elite accord to it, namely the values that serve capitalist exploitation. It is “transformed materially” and its “internal relations are ignored in determining properties and processes” (Shiva 1995a, 199; 1995b, 267). Through the mediation of technology, nature is not only represented as a mere resource, but *becomes* no more than a mere resource.

Shiva’s unmasking of the science and technology involved in development as the tools of a Western capitalist patriarchal project of ontological domination is intended to serve a political function. As Hacking points out, the point of such unmasking exercises is to liberate the oppressed (Hacking 1999, 58). And for Shiva, those most oppressed by the Western technological project are women and nature. And as Hacking also points out, power is never simply imposed from above. Women, in so far as they share and operate within the capitalist patriarchal conceptual system, and in so far as they allow their interactions with nature to be mediated or usurped by reductionist ontology in the name of development, reinforce and maintain their own oppression and the oppression of nature. Shiva’s critique of technological metaphysics is to further enable women to engage in liberatory praxis. The “liberation” of nature that Shiva calls for is in fact a call first to prevent technology’s world-making reconstruction of nature, and second for a conceptual and spiritual turn to nature, such that one heeds what nature “says.”<sup>8</sup> The second related function of Shiva’s ontological critique of technological metaphysics is to let women know that although nature has been turned against them both conceptually and materially, it is only contingently hostile. It is only a contingent rather than a necessary matter that nature is perceived as diametrically opposed to society, and that progress is perceived as the continuous liberation from reliance upon nature. Indeed, Shiva intends to show that it is only a contingent matter that nature appears to have turned against them in a material sense, for example through the environmental deterioration that followed the introduction of Green Revolution technology in the Punjab. Being a contingent matter, Shiva points out that nature (as Prakriti) can be and must be reclaimed.

This call to reclaim nature becomes an imperative for women for two reasons. First, Shiva argues that the technological imposition of reductionist metaphysics on nature

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<sup>8</sup>This suggests that nature has, on some level, a will of its own, as only something with a will can be “liberated” (Hacking 1999, 59). This view ties in with Shiva’s Hindu-oriented advocacy of goddess-worship. Nature is said to be active rather than passive and to embody a type of “vital principle.” As it is acted upon, it too acts upon human agents.

inevitably results in the destruction of the natural processes that support life. Thus, the reclamation of nature is essential for the continuation of natural processes. Second, Shiva argues, women are usually those in closest contact with nature and its processes, in that they are the ones who depend most upon the products of the natural environment for their livelihoods and sustenance (Shiva 2009). Thus, any impacts of the environmental degradation caused by technological intervention will be felt by women first. And given the inferior status of women within society, they will be the ones least able to bear the ramifications of the loss of their livelihoods. In this way the destruction of nature and the destruction of women is linked.

## Conclusion

Shiva's ontological project revolves around the feminine principle that she identifies with Prakriti as Nature. Shiva uses the feminine principle as a point from which she can produce oppositional categories to critique reductionist ontologies of domination, and from which she can identify and foster alternative modes of being that eschew dualistic concepts and embrace forms of praxis and spirituality that sustain the processes of life. Rather than lacking an ontology, as Tamari suggests, I have argued here that Shiva's work contains a significant ontological component, and I have indicated how it underpins her ecofeminist philosophy, in particular her critique of Western scientific metaphysics and the oppression of women and nature.

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