Environmental Sustainability, Economic Growth and Distributive Justice

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Abstract

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The global ecological crisis is at once a humanitarian crisis: the well-being of both the human world and the non-human world is increasingly in jeopardy. The predicament has multiple causes, and calls for responses on different fronts and levels, and a key, perhaps decisive, factor in both is, I argue, people's beliefs about and attitudes towards material production and consumption. The widely influential and characteristically modern belief of both the desirability and the possibility of indefinite increase in material production and consumption has been and continues to be a powerful driver of human appropriation of the environment. But this belief is both scientifically ill-informed and normatively ill-advised. It is based on the one hand on ignorance about the ecological finitude of the earth and on the other hand on indefensible ideas about the nature of human flourishing.

Consequently, the belief is fundamentally at odds with the demands of distributive justice with respect to the benefits and the burdens of human dependency on the natural environment, within and across generations as well as societies. Both sustaining the earth's life-supporting and welfare-promoting capacity in the long term and realizing the just sharing of this capacity in the short term require timely and strategic restraint in the pursuit of economic growth. I argue that a holistic understanding of human welfare, one shorn of materialistic biases, renders reference to the notion both necessary and sufficient

for formulating sound normative principles that proscribe the wanton abuse of nature. The idea that nature has inherent value independent of human interests need play no role, in my view, in these principles because it is based on dubious metaphysics.

Under the current condition of worldwide ecological distress and socioeconomic polarization, achieving universal basic welfare without further damage to the environment requires the remediation of existing injustices, both globally and domestically, through drastic redistributive measures. Assertiveness on the part of the state is also needed to reign in the market's inherent expansionary tendencies. The easing of ideological and institutional pressures towards economic growth is not only instrumental for realigning market and cultural forces to better serve the causes of environmental sustainability and distributive justice, it can also help create/restore a social atmosphere hospitable towards the practice of ecological virtues such as simplicity and self-sufficiency.

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Ch.1 Introduction

1.1 Overview

In the early 1970's, The Club of Rome's report *The Limits to Growth*[1] catapulted the issue of whether continual increase of human presence on earth threatens to breach the planetary environment's carrying capacity into the public consciousness. The media spotlight has long since shifted away, but the controversy is still very much alive. One formulation of it is in terms of the merits and demerits of economic growth given our understanding of the environment and our commitments to justice – social, economic, and environmental. For its defenders, economic growth offers the most effective means towards achieving justice by alleviating material scarcity, a, and perhaps *the*, fundamental practical (though not of course theoretical) obstacle to distributive justice. *A fortiori*, therefore, the pursuit of economic growth is compatible with, because instrumental towards, the pursuit of other objectives such as liberty, justice, and environmental protection. For its critics, the relentless drive for economic growth contributes towards myriad of ills, indeed, many of the very same ones for which growth enthusiasts claim it provides the answer.

There are, therefore, different angles from which the rational and ethical soundness of the imperative of economic growth might be assessed.[2] The perspective I consider in this study is that of distributive justice with respect to environmental

[1] Donella Meadows, et al, *The Limits to Growth; A Report for the Club of Rome's Project on the Predicament of Mankind* (New York, Universe Books, 1972).

[2] Many have studied the social and psychological limits to growth. See, for example, Fred Hirsch's *Social Limits to Growth* (Cambridge, MA: Harvard University Press, 1976) and Paul L. Wachtel's *The Poverty of Affluence: A Psychological Portrait of the American Way of Life* (Philadelphia, PA: New Society, 1989). Representative of more recent attempts to deal with these topics include Juliet B. Schor's *The Overworked American: The Unexpected Decline of Leisure* (New York: Basic Books, 1991) and *The Overspent American: Upscaling, Downshifting, and the New Consumer* (variant title: *Overspent American: Why We Want What We Don't Need* (New York: Basic Books, 1999).

resources, or in short, distributive environmental justice; the principal question that interests me, accordingly, is whether this imperative as it is currently conceived of and executed in much of the world is consistent with the demands of distributive environmental justice, whose central principle, I contend, is the principle of environmental sustainability. Compatibilism, the view that these objectives are consistent with one another, continues to prevail. But it is wrong, and dangerously so. Ecological finitude does not allow for the indefinite increase in material wealth, and therefore, the aspiration for the latter necessarily undermines the pursuit for the just sharing of environmental goods and bads across time and space. We must choose, and we must choose to prioritize the demands of justice, an end in its own right, over the demands of growth, which is merely a means to other ends.

This is not simply a choice about the kinds of natural resources and productive technology we use. Ultimately, it involves a choice about the ends towards which we produce and their justification, a choice about values and ideals. If we continue on this path of relentless pursuit of economic growth, we face the strong likelihood of ecological overshoot and collapse, and all the attendant social strife and human suffering, and the prospect of increasing, not decreasing, distributive injustice. Moving away from this path takes great resolve. But first, it takes a clear understanding that this is indeed what we must do if we are to do right by our descendants and the earth's other inhabitants. There is, to be sure, nothing intrinsically necessary, or desirable, about the survival of *Homo sapiens*. The earth, and *a fortiori* the universe at large, will get on just fine with or without us. However, to the extent we claim to wish, out of collective biological self-interest if nothing else, to stick around and have a jolly time for as long as we can, we

might as well earn the right to, to make our species *deserving of*, earth's hospitality. We must cease and desist in destroying our planetary homeland and stop pretending that we are something we are not, namely, a supernatural species somehow unbound by the laws of nature. My central goal in this dissertation is to make or otherwise strengthen the case that abandoning the beliefs in compatibilism, and the necessary desirability of economic growth are the very place where our rehabilitation ought to begin.

1.2 Plan for the following chapters

The dissertation has eight chapters, including the introduction and the conclusion. The overall argument can be roughly divided into three parts: (1) chapters 2, 3 and 4 are concerned with clarifying the meaning of key concepts used in, as well defending the underlying normative theory assumed by, the debate between compatibilism and incompatibilism as I understand it; (2) chapter 5, relatively self-contained, is the refutation of compatibilism, and (3) chapters 6 and 7 draw out normative implications – in terms of distributive justice and personal virtue, respectively – of the truth of incompatibilism. Chapter 8 will be the conclusion.

A good deal of criticism of humanity's aspiration for ever-increasing material prosperity has been couched in terms of its disregard for and threat to environmental justice. The concept of "environmental justice", much like "environmental ethics", is inherently ambiguous. It could refer to justice among human beings in regard to the sharing of the environment in all the different ways in which it supports human survival and development, or it could denote justice *for* or *owed to* the environment. On the first but not the second construal, the concept can be treated as a shortened version of the

more accurate, more precise, but also clumsier concept of “distributive environmental justice”. Much of what I have to say in the name of environmental justice, therefore, falls squarely under the rubric of distributive justice as customarily understood. Explaining and defending these terminological and interpretative choices will be the topic of chapter 2. I will defend the first construal of “environmental justice” by arguing that it makes little sense to speak of justice owed to the environment. We can speak meaningfully about owing something the duty of justice only insofar as that thing is morally considerable, and as such a member of the moral community. To be a member of the moral community something must be intrinsically valuable, such that it can be a bearer of rights that deserve to be respected.

The notion of intrinsic value is itself contested, especially as it applies to corporeal yet non-sentient entities such as the natural environment. Assuming that entities that have interests of their own exemplify one basic kind of intrinsic value, other kinds of values, intrinsic or otherwise, of other kinds of entities, can then be defined by reference to the different kinds of interests of which entities with interests are capable. So far as corporeal yet non-sentient things such as the natural environment are concerned, there are two types of ground on which we can attribute intrinsic value to them: (1) they are interest-bearers in their own rights; (2) they are the intentional or grammatical objects of a particular kind of interest. Moral considerability, membership in the moral community or the community of justice, should be based, I argue, on the kind of intrinsic value based on an entity’s having its own interests, and not on intrinsic value based on an entity’s status as the object of an interest. The natural environment, I argue, is not qualified to be the sort of thing to which the duty of justice can be owed as it cannot be said to have

interests of its own. In my defense of this view I will also discuss the idea of centrism, which features prominently in debates about the scope of morality. I believe that both ambiguity and confusion attend the deployment of this notion, a situation that has impaired our ability to grasp the precise meaning and the relative merits of various specific theses of centrism, such as anthropocentrism, bio-centrism and eco-centrism.

The central principle of distributive environmental justice is the principle of environmental sustainability. I divide up the discussion of this principle into two parts: one is largely semantic, which is the subject of chapter 3, and the other largely normative, which will be the subject of chapter 6. In chapter 3, my main goal is to achieve a level of coherence and clarity on the meaning of this fiercely contested notion that will be sufficient for defining the orientation and scope of the normative arguments to be developed later. My approach to the semantic question is somewhat unconventional in that I begin with the concept of "sustainability", and proceed to determine how best to interpret the way in which any qualifier added to it is suppose to function. The insights yielded by this line of inquiry define the systematic constraints which I argue should be imposed on our understanding of composite phrases such as "environmental sustainability". The obvious virtue of this formal approach (its basic maxim being that the meaning of compound linguistic structures is a function of the meaning of their simple parts) is that, like the rules of grammar, it allows us to streamline how we understand *any* compound phrases involving the concept of sustainability, including "social sustainability", "political sustainability", "financial sustainability", and so forth. This is a virtue, I believe, because it helps reduce the ad hocness, or "definition by fiat", in my

view a distinct vice, that has marked much existing writing on the meaning of "environmental sustainability".

My analysis of the meaning of "sustainability" takes off from the observation that the notion is not irreducibly moral in the way, say, that of fairness is. "Sustainability" is most naturally interpreted as denoting a dispositional property, namely, the capacity for something to continue to meet certain specific conditions over time. The generic question of whether sustainability is good or bad is, therefore, unanswerable. It only makes sense to ask, concerning some particular subject matter, whether its sustainability is good or bad relative to some specific requirements to which it is subject. The concept of environmental sustainability is, I argue, best treated as a truncated form of the concept of the environmental sustainability of the human economy. It refers to the ability of the way in which societies make use, individually and collectively, of the environment, in all the ways in which it can be used, for the benefit of humanity, to continue in the long term. Environmental sustainability, thus understood, is a good thing, at least from a human, and more specifically, biological as well as prudential, point of view.

However, there is a still deeper, and ethical dimension to the normativity of the concept of environmental sustainability: since temporally and spatially local conduct towards the environment often register distant and long-term consequences borne by others, they are interpersonal in their effects if not in their intention. Therefore, such conduct is naturally amenable to the requirements of distributive justice with respect to both environmental benefits and burdens. In fact, a key concern that animates my defense of the notion of environmental sustainability in chapter 3 is my insistence that insofar as we treat this principle as a principle of distributive environmental justice, which is

implicitly assumed in much writing on environmental ethics, it must be applicable to both the intergenerational and the intragenerational dimensions. Concern with environmental sustainability need not and should not mean indifference to distributive justice in the short term, which would have amounted to the replacement of one blind spot by another rather than the elimination of all blind spots.

Since I understand both environmental justice and environmental sustainability in a way that in some sense turns on human interests or welfare as the ultimate gauge, the question of whether and how welfare consequentialism (or utilitarianism) in general and economics in particular can do justice to the full gamut and depth of human interests in the natural environment naturally arises. Many philosophers have been skeptical about the ability of utilitarianism to make sense of the non-instrumental value of nature (or anything else), the kind of value existentially dependent on humanity's non-instrumental interests – emotional, spiritual, aesthetic, therapeutic, and so forth – in nature. In chapter 4, I evaluate and answer some of these charges by subjecting to close examination, and by criticizing, arguments to the contrary by two philosophers, Mark Sagoff and Elizabeth Anderson. First, I offer a qualified defense of welfare consequentialism in relation to non-instrumental value in general and that of the environment in particular. Then I consider the ways in which that defense may or may not be extended to address economic analysis of the same subject. I argue that utilitarianism offers a coherent and adequate perspective from which to consider the non-instrumental value of the environment and our desire to guard it against degradation. However, this requires that we adopt a suitably broad construal of the concept of welfare such that the satisfaction of non-instrumental interests, of any kind and in anything, is allowed to score points.

Economics has on the whole failed so far to honestly or consistently adopt or adhere to this broader conception of welfare. Afflicted with the materialistic bias of the prevailing economic construal of "welfare", most economic mainstream treatment of environmental management issues are ill-suited to fully benefit from even my qualified defense of its intellectual sire. They are part of the problem, and not part of the solution. Still, I will outline some suggestions as to how the intellectual respectability of economics might be rehabilitated and how it can be a genuinely useful tool and intellectual resource in the cause of environmental sustainability.

Not only can welfare consequentialism make coherent sense of the non-instrumental value of the environment by rejecting the welfare-neutrality of the satisfaction of non-instrumental interests, desires and preferences, it is also able to generate, from its internal conceptual and methodological resources, restrictions on societies' material practices that are appreciably more restrictive than what many economists would currently typically find adequate for achieving environmental sustainability. However, this presupposes factual correctness about the carrying capacity of the ecosystem. Without the benefit of a scientifically sound understanding of the finitude of the earth's ecosphere and the dynamics of anthropogenic environmental impact, the most internally coherent theory of practical reason would be unable by itself to lead us towards the right normative conclusions. After all, a Bethamite utilitarian would have no utilitarian reason for refraining from an act unless she also believes that the recipient of her action is a being capable of suffering pain. Likewise, even a theoretically satisfactory conception of and set of methods for gauging welfare must be

deployed in conjunction with scientifically sound empirical information to be of much practical use.

A brief overview of a scientifically sound understanding of the finitude of the earth's ecosystem and the dynamics of anthropogenic environmental impact will be the subject of chapter 5. Since the debate about compatibilism is essentially a debate about whether it is possible for the scale of material production and consumption to expand indefinitely on planet earth, that is, whether the environmental imposes constraints on economic growth, I open chapter 5 with an examination of these two key concepts: "possibility" and "constraint". There is, I argue, no homogeneous concept of "possibility". Instead, there are different kinds of possibilities, corresponding with different types of laws. The laws of logic, the laws of physics, the laws of ecology and the laws of human psychology define, respectively, the bounds of what is logically, physically, ecologically and psychologically and humanly possible. For compatibilism to be true, it is far from enough to show that it is physically possible for the human economy to continue to expand in a bio-physically finite environment. It must also be shown that this is practically possible, that is, not just ecologically possible but also humanly, socially, and financially possible. In light of this clarification of the concept of possibility, I suggest that we think of the notion of constraint as similarly context-dependent: nothing is intrinsically a constraint, but anything could be a constraining factor if altering it entails costs to an agent. The greater the cost to her of changing a fact, the more of a constraint it is, to her, and relative to her overall objective. And the cost of effecting the change would not be determined by any one single law that bears on the matter, but by *all* of those that do.

I then proceed to criticize technological optimism, on which compatibilists have in effect staked their argument. Not only are there no strong inductive arguments in favor of it, but, there are definitive deductive arguments against it. The magnitude of anthropogenic environmental impact is a function of three variables: the size of the human population, material (and energy) consumption per person, and environmental impact per unit of material (and energy) consumption. *Prima facie*, in order to check the upward shift of anthropogenic environmental impact, which is ultimately what is required for environmental sustainability, quantitative increase in respect to each of the three determinant factors must itself be subject to restraint. Among these three factors, technology can affect only the last one, and not always in environmentally favorable ways. Yet the aspiration for unlimited economic growth is the aspiration to increase indefinitely the second of these three factors. No amount of technological advances can offset the adverse environmental impact of humanity's insatiable material appetite. Technological optimism is scientifically ill-advised, and compatibilism is, therefore, false.

Environmental justice and sustainability in an ecologically finite world requires just saving of environmental resources for the future and equitable distribution among contemporaries of present allowance. These are only achievable through discipline in material production and consumption. In chapter 6, I pursue something of a meta-theoretical approach to the question of distributive environmental justice. In regard to just environmental saving, while many writers have favored what is known as the "no-decline" requirement, I disagree that this is the best intergenerational distributive principle. Depending on exactly how "no-decline" is construed and measured, this requirement is either meaningless or indefensible. Instead, I suggest that the principle of

just savings is best defined substantively, that is, in terms of what we would wish future generations to be guaranteed, which we can figure out by reference to our considered judgments as to what level, and content, of environmental bequest from preceding generations we would most likely wish ourselves to be the beneficiary of. There must, however, be a lexical ranking among the various components of the bundle of environmental bequest from each generation to the next that accords absolute priority to basic material needs over other human interests, desires and preferences, including some – such as the opportunity for wilderness experiences – that have been touted by environmentalists for their green credentials. This principle of priority will prove instrumental for integrating just environmental savings, on one hand, and equitable intragenerational environmental distribution on the other, and it also helps to answer concerns that just saving might shortchange the worse-off among the currently living.

This priority principle also raises questions about two key issues in distributive justice in general and in theory of distributive environmental justice in particular: one concerning redistribution and the other equality. I tackle these two issues from two related yet distinct points of view. First, I consider the significance of what we would call the “principle of redistribution” and the “principle of equality”. I will try to illustrate the complexity around the principle of redistribution by looking at the uncertain place redistributive issues occupy in libertarian theories of justice, such as Nozick’s, and meta-theoretical considerations about what we ought to demand from and expect of any so-called “theory of (distributive) justice”. The second perspective from which the issue of redistribution and equality will be addressed has to do with the necessary and/or sufficient conditions either for effecting actual redistributive economic measures and

social policies or for producing egalitarian distributive outcomes. The failure on the part of many theorists of distributive justice to emphasize the moral implications of the fact of ecological finitude urgently needs correction. While the underdetermination of theory by empirical data may not be definitely overcome in the area of ethics and morals any more than it can be in the area of science, there are strong reasons to believe that, as concerning environmental distributive justice, empirical richness and accuracy will facilitate greater agreement over the outcome in terms of normative principles. Substantively, they make it more rather than less likely that the principles will call for redistributive and growth restrictive measures that will reduce current inequality in suffering as well as wealth at both the global and the domestic levels.

The truth of incompatibilism, the need for discipline in material production and consumption in order to achieve environmental sustainability and social justice in an ecologically finite world, also have implications for personal morality. In chapter 7, the penultimate chapter, I draw out some of these implications by sketching a theory of environmental virtues. I begin with a discussion of sentiments and attitudes toward the environment that writers on environmental virtues have made note of, such as humility, respect, love, reverence, benevolence, compassion, gratitude, aesthetic appreciation and wonder. While I do not object to regarding them as generic virtues, I do argue against the notion that they are, even insofar as they are directed at the natural environment, necessarily environmental virtues. My objection takes issue with a certain ambiguity in the commonly held presupposition of this view, namely, that these attitudes and sentiments must somehow be based on the prior intellectual belief that the environment is intrinsically valuable. Depending on which type of intrinsic value the natural

environment is held to have, affective or attitudinal response to that belief may be either fundamentally misleading, and as such not virtuous at all, or virtuous, but still dubiously sufficient for the purpose of initiating actions that are environmentally virtuous or deterring those that are environmentally vicious.

In my discussion of environmentally virtues and vices in action I criticize the tendency in the rather limited existing literature on the subject to highlight those that are long on symbolic and recreational value but short on substantive value in terms of contribution towards reduction in material and energy throughput. I will examine the arguments of Ronald Sandler, Philip Cafaro and Peter Wenz. My own positive account will include detailed discussion of two key ecological virtues, frugality and material simplicity, and two key ecological vices, wastefulness and physical laziness. My main goals are to define the notion of the ecologically-sound lifestyle and to stress its importance, both theoretical and practical, for environmental sustainability and distributive justice. Commitment to it, I believe, requires compassion, concern and respect for our fellow human beings more than it depends on compassion, concern and respect for the environment itself.

Just institutions and policies and virtuous individuals are all necessary but not by themselves sufficient for achieving environmental sustainability and distributive justice. But each stands only so much chance of realization as the society is willing to accept the truth of incompatibilism and to conduct its affairs accordingly. In the final chapter, I make note of the importance of coherence between economic, political and social forces at the macroscopic level and norms of personal morality at the microscopic level.

Ch.2 Understanding "Environmental justice"

2.1 Two Conceptions of Justice

In this chapter, I argue for a particular conception of the notion of "environmental justice". In the next, I examine what I take to be its central principle, namely, the principle of environmental sustainability. There are two ways to understand what may be involved in clarifying the meaning of a concept. It can be a purely descriptive undertaking whereby one documents the different meanings people in fact associate with or attribute to the concept. This type of clarification allows one to specify the particular sense one intends in using a concept without committing oneself to a judgment as to the correctness or relative soundness of all the different senses. Alternatively, to clarify the meaning of a concept may be an essentially critical and prescriptive enterprise, where one enumerates the different usages to which a concept is susceptible in order to assess their theoretical soundness. With regard to "environmental justice," I take myself to be engaged in the second kind of task.

Superficially, "environmental justice" bears resemblance to compound phrases such as "social justice", "economic justice" and "environmental ethics". However, unlike "social justice" or "economic justice", "environmental justice" is neither unambiguously anthropocentric nor unambiguously non-anthropocentric. The modifier "environmental" can function in one of two ways. It may refer to the moral subject to which the duty of justice is owed, or it may serve to specify the type of benefits and burdens whose distribution among human beings is subject to the constraint of justice. On the first interpretation, the concept refers to justice *for* the environment, and marks a direct challenge to the traditional conception of the scope of justice by including the non-natural

world. Interpreted in the second way, "environmental justice" refers to fairness and equity in the human use of environmental resources, where the notion falls squarely within the scope of justice, and more specifically distributive justice, as given by the traditional demarcation.

The concept of "environmental justice" shares its semantic ambiguity with "environmental ethics". "Deep" environmental ethics is supposed to demand a substantive extension of the scope of moral considerability to the non-human world; by contrast, "shallow" environmental ethics merely brings some human-centered theory of ethics to bear on the analysis of environmental problems.[3] As a consequence, whether environmental justice forms a proper part of a more encompassing environmental ethics in a way analogous to the way in which justice constitutes but one aspect of morality depends crucially on how the predicate is used or construed. "Shallow" environmental ethics cannot really have logical space within it for justice *for* the environment, or "deep" environmental justice. By parity of reasoning, "deep" environmental ethics does not easily accommodate "shallow" environmental justice. Therefore, for the part/whole relation to hold between environmental justice and environmental ethics, the two phrases must be construed consistently.

I reject the "deep" interpretation of both "environmental ethics" and "environmental justice". To many, this would decisively place me in the camp of anthropocentrists. But I resist this charge, not because I believe it is false or groundless,

[3] This is not to deny, of course, that one could not coherently argue that "shallow environmental ethics" is really a contradiction in terms. For one might say, for example, that unless the predicate "environmental" restricts the moral consideration accorded to the environment to its intrinsic value and its implications for constraints upon human actions, "environmental ethics" is a misnomer. The phrase, therefore, logically requires non-anthropocentrism as its metaphysical underpinning. On this view, "shallow environmental ethics" would be oxymoronic.

but rather that the meaning of the concept of anthropocentrism is ambiguous. I present my argument for this view, and its implications, in section 2.5, In 2.2 – 2.4, my task will be to explain why I don't believe that the notion of justice can be meaningfully deployed in conceptualizing humanity's duty towards the earth's environment. In my view, attempts to strain the concept of justice to such effect have been fraught with difficulties and incoherence. My first step in arguing for this view is to get a grip on the concept of justice.

One dominant view, sometimes traced to Aristotle, is that justice is that concerned with each receiving "their due". This basic conception gives rise to three substantive questions: whom, of what and why (or how). The first is the question about membership in the community of justice, that is, what and whom can be the beneficiary of justice, or to what or whom is the duty of justice owed. The answer to this question depends at least in part on those to the second and third, which in turn depend on the kind of justice we are considering. If we are concerned with distributive justice, what is due a beneficiary of justice consists in their share of some distributable benefits or burden; in the context of retributive justice, it is in the form of punishment for moral and/or legal transgression. In both, the size of the share and the severity of the punishment are respectively determined by reference to some relevant principle of whatever formal structure and material content.

I wish to discuss two features that distributive and retributive justices have in common which distinguish them both from the other notion of just that I will discuss presently. First, they are both graded or scalar notions, in that they both presuppose the existence of some ideal which is in reality more or less approximated. It makes sense to speak of one distributive pattern or process as being either more or less (un)just than

another; likewise, we can sensibly speak of one punishment or judicial system as being either more or less (un)just than another. This is due to the fact, I think, that both of these types of justice are concerned with the quantitative measure of what a beneficiary receives. Surely, we cannot meaningfully speak of fairness in the distribution of something unless not only the thing, or at least the value thereof, is divisible in some relevant way but also amenable to measurement and quantification. This is what makes judgments to the effect that an individual has received either more or less than what justice demands meaningful. The same is true of retributive justice; some legal systems are judged to be more (un)just than others. The second common feature between distributive and retributive justice of relevance here is their method of determination. Given any particular substantive theory of either distributive or retributive justice, rendering a judgment as to whether a particular pattern or procedure of distributive or putative arrangement meets its demands is a relatively straightforward matter amenable to extensional logic. This means that whether a particular dispensation of rewards or punishment is just depends on whether certain external relationship among people and things obtain, and not on the content of particular agent's mental states, such as their beliefs or desires.

By contrast, there is very different conception of justice that is neither scalar nor extensional. Instead, it is bivalent, in the sense that something either is or is not treated justly. And it is also governed by intensional logic, as I will try to explain shortly. When we use the notion in this sense, what is due a beneficiary of justice is not some quantum of a particular substance, but rather the regard in which it, or he or she, is held by the dispenser of justice. The *object* of normative judgment deploying this notion of justice is

not agent-neutrally describable states of affair but the type of value an object is deemed to possess in the eye of a beholder, as it were. I am referring here to the notion of justice that is associated with the issue of "moral considerability", which, on one influential view and the one I will be following below, turns on the issue of rights.[4] According to this view, to be treated as morally considerable is to be treated as an object of the duty of justice, and to be treated as an object of the duty of justice is to be treated as, or indeed to be, a bearer of rights. To act justly towards such an entity is, accordingly, to act in ways that show respect for its rights.

Given these two distinct notions of justice, the task of clarifying the meaning of "environmental justice" is accordingly reducible to the tasks of determining whether either of them applies to the non-human environment as a whole. In the following sections, I will try to show that neither is applicable, and that the idea that the environment can be a genuine claimant of justice is confused. For reasons that will soon become clear, the most critical question concerns whether the second, intensional concept of justice applies.

2.2 The Environment and the Scope of Moral Consideration

I begin with the graded and extensional notion of justice, under which distributive justice falls. The contexts in which questions about distributive justice become relevant must exhibit a certain formal structure. First, there must be (at least two) [5] claimants of

[4] Kenneth Goodpaster, "On Being Morally Considerable", in *Environmental Ethics: Divergence and Convergence*, (eds.) Susan J. Armstrong and Richard G. Botzler (McGraw Hill, 1998), 346.

[5] One might object to this condition by saying that we can say, for example, in a situation in which there is one person and one apple, that the person acts justly in eating the apple, or at least that she does not act unjustly in doing so. However, it seems that if either of these statements is true, it must be vacuously true. In this situation, the issue of distribution does not arise, and so the issue of distributive justice does not either. In fact, this requirement is implicit in the relative scarcity condition of Hume's account of the

distributive justice; second, there must be something distributable among the claimants. Moreover, two formal conditions must be met for an entity to count as a claimant of distributive justice. First, it must be ontologically distinct and separable from (at least one) other entities with which it can enter into a distributive relation. Second, it must be ontologically distinct from the object of distribution. Formally, the minimum number of terms among which the distributive relation can hold is three: two claimants and the object of distribution. As such, human beings cannot enter into such a relation with "the environment as a whole". On the extra-societal construal of this phrase, while it refers to something numerically distinct from human beings, they cannot enter into a sharing relation relative to a third entity numerically distinct from each of them; and on the trans-societal construal, humans and "the environment as a whole" are not numerically distinct since one is a proper part of the other, the whole.

Far more contentious, however, is whether the concept applies to the earth's natural environment. The intensional notion of justice is, I think, in a crucial sense the logically more fundamental of the two notions of justice; it makes no sense to ask whether something has been treated justly in terms of the graded notion of justice unless it has antecedently been determined that the intensional notion of justice applies to it. For example, all theories of economic or social justice presuppose that human beings have rights and are morally considerable.[6] Arguments for why some entities have rights and deserve respect while others do not must be provided by a separate theory, which speaks to the intensional conception of justice. As concerning "environmental justice", the

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objective circumstances of justice. It is scarcity of something relative to a group of people all of whom want or need that thing and not to a single person's needs or wants that occasions the need for justice.

[6] This is, of course, not meant to obscure the fact that historically not all human beings were included so far as the theories of justice are concerned. This shall not be my focus since I am concerned to highlight here not the distinctions among human beings, but the distinction between human beings and non-humans.

crucial question is not *how much* of something the environment gets relative to humans, but rather *whether* it can have rights on the basis of which it can make claims upon us, albeit most probably by proxy if at all.[7]

Two closely related, and significantly overlapping, views according to which the environment does are ecocentrism (a variety of deep ecology) and environmental holism. According to both views, the earth's natural environment, particularly when viewed as an integrated whole, has intrinsic value, or a good of its own, and must therefore be treated as a holder of rights. And since all rights-holders are members of the moral community, or the community of justice, the environment is owed the duty of justice. It is appropriate, therefore, to begin by inquiring what it means to say that something has intrinsic value.

It is common practice to explicate the concept of intrinsic value in terms of phrases such as "being valuable for its own sake (or in its own right)", or "having a good of its own", or "being inherently valuable", or "having inherent worth". One finds an illustration of this in a typical statement such as this: "something that has intrinsic value or inherent worth is valuable in and of itself, not because of what it can do for us."[8] If this seems clear, the appearance is deceiving. What does "in and of itself" mean? And what is it for something to "do" something for us? The second question turns on the perennial philosophical issue of the distinction between activity (the doing of something) and passivity (the state or condition of being on the receiving end of an action). Must "doing" involve or imply agency, intention, purposiveness or motion? This question has

[7] It ought to be noted here, however, that a basic distinction can be made between questions about the *scope* of justice on one hand and those about the *content* of justice on the other hand. See, for example, Onora O'Neill's *Towards Justice and Virtue: A Constructive Account of Practical Reasoning* (Cambridge University Press, 1996), 98. Therefore, the fact that the concept of right features centrally in a theory about the former does not mean that substantive principles of distributive justice must be based solely or at all on that concept. This will become clearer in the next chapter.

[8] J. Baird Callicott, "The Conceptual Foundations of the Land Ethic," in *Environmental Ethics: Readings in Theory and Application*, 4th edition, ed. Louis Pojman (Thomson/Wadsworth, 2005), 149-61.

implications for whether inanimate objects ever *do* anything at all, and if they do, how to distinguish among the different kinds of things they can be said to do. For example, we might say, not implausibly, that between me and the hammer I am using, I am the one who is doing something and the hammer is, strictly speaking, not *doing* anything at all. Others, including the author of the quote above, might opt for a more permissive interpretation of "do", and allow that insofar as the hammer allows me to put a nail in the wall, it does something for me. Yet even if we opt for the more permissive usage, we would still want to be able to differentiate, in some principled way, between what a hammer can do for us and, say, what a beautiful landscape can do for us. I will return to this question shortly.

If we conceded that phrases allegedly synonymous or co-extensive with "intrinsic value" are of little help, let us turn back to the phrase itself. Customarily, "intrinsic" is explicated negatively, as antonymous with "extrinsic". But this cannot help much if "extrinsic" is in turn defined as the opposite of "intrinsic," which it often is. "Instrumental" has often been used in explaining/defining "extrinsic", a practice that has encouraged treating "intrinsic" as meaning "non-instrumental". But this is problematic as well since the concept of instrumentality and the closely related concept of "use" are themselves inherently ambiguous. Is it acceptable to say that we use art to beautify the city? If not, why not? And if so, then why is it not acceptable to say that we use beautiful landscape for lifting our spirit and to sooth our soul? And, if the reason we want to preserve the beautiful landscape is that it can lift our spirit and soothes our soul, does it not follow that it is valuable because of what it can *do* for us?

As to the concept of “value”, regrettably, clear distinctions have not often been made between general and particular questions about it. General questions about value includes questions about what it is, how it relates to facts, and what it means to say something is valuable. By contrast, particular questions about value usually are questions about what the value of some specific thing is. But, of course, our ability to answer the second type of question depends on our ability to answer the first. To compound the confusion, some writers use the infinitive “to value” when they mean “to value positively/highly” or “to regard as good”. The word “disvalue” is then used to express “to value negatively/lowly”. But this is not to clarify the equivocality of the word “value” but to add to the confusion. “Disvalue” is at once redundant and misleading, the worst kind of fate for a word. It is redundant for expressing either the idea of valuing something negatively, as we have the perfectly good word “bad” for that, or the idea of regarding something as being value-neural, that is, neither good nor bad. It is misleading since it is inherently ambiguous as between the meaning attached to these two redundant uses. What *would* have been a valuable (not redundant or misleading) addition to our *philosophical* vocabulary for talking about value is the word “avaluable”. In moral philosophy, the distinction between “amoral” and “immoral” is relatively clear, interesting and useful. Had the word “avaluable” existed, it would certainly sharpen our ability to talk about the absence of value by removing some of the ambiguities about just what it is whose absence is being meant.

(The situation is mildly more salvageable in the case of the word “devalue”. To devalue something is not to deny it value but to reduce its positive value. There is no confusion, for example, as to what the word means when we are talking about currencies.)

For expository clarity, I adopt the phraseology of "value attribution". To say that something has value is to say that value can be attributed to it. This convention allows us to distinguish between two issues when it comes to value: (1) what has it, that is, what are the objects to which value can be attributed. And (2) what it is that something has when it is said to have value, that is, what is the ground of the attribution.[9] All different kinds of things can be eligible for value attribution, including events, states of affairs, relations, corporeal objects, universals, particulars, and so forth. Moreover, one of the most notable things of entities that have been said to have intrinsic value is their diversity. There seems little else that ecosystems, sentient beings, pleasure, happiness, autonomy, rationality, truth, beauty, friendship, peace, justice, particular physical objects, particular living things all have in common. It is unlikely, therefore, for their intrinsic value to be amenable to the same explanation and analysis.

So far as intrinsic value is concerned, I suggest that we proceed by classifying the subjects of attribution first, and then consider the grounds for attribution subsequently. How value is attributed, it will turn out, will depend on the identity and nature of the thing in question. I will divide things to which value can potentially be attributed into two basic kinds of substances or ontological categories: "objectively existent",[10] that is, existentially mind-independent, corporeal entities, and everything else. Eudaimonia, the goodwill, felicity, states of consciousness, peace, truth, knowledge, beauty, friendship, and the virtues all belong to one side of this divide. Individual living organisms, including human and non-humans alike, inanimate objects, and collections or combinations thereof, including ecosystems, belong on the other side. Value attribution to

[9] C. I. Lewis *An Analysis of Knowledge and Valuation* (La Salle, IL: Open Court, 1946), 386.
[10]Lewis, 1946, 387.

things of the first category necessarily involves the mind, mental activities, or some lesser versions thereof. As far as value attribution to things belonging to the second category is concerned, there are two main competing theories. On one, value is a non-relational property, which may emerge from and depend on other intrinsic properties of the object of predication but does not otherwise presuppose any relation the object stands to anything else. On the competing view, value is held to be essentially a relational property, consisting in certain external relationship involving the object in question and a perceiver of some kind, either a mind or its evolutionary antecedent, the locus of agency (though of course not necessarily full-scale moral agency).

The first view has variously been labeled realism, objectivism, Platonism or the mind-independent view about value.[11] On this view, there are facts and truths about values that obtain independently of our knowledge of or evidence for them. The notion of "agent-neutrality" has also been associated with this view. The second view coincides largely with what has more familiarly been called subjectivism, projectivism, or the "mind-dependent" theory of value about value. Protagoras's *homomensura*, the thesis that "a human being is the measure of all things" exemplifies this position.[12] I eschew the label "relativism" here only because it is too loose and ambiguous. Not only can there be different points of reference, these different points of reference can also stand to one another in complex relations. For example, to deny that morality is God-given and to assert that it depends on the power of human's faculty of reason is not therefore to deny

[11] On Dale Jamieson's taxonomy of sources of value, he distinguishes subjectivism, conventionalism and realism. The first two fall under the mind-dependent view I discuss here, while realism roughly is equivalent to the mind-independent view. See Dale Jamieson, *Morality's Progress: Essays on Humans, Other Animals and the Rest of Nature* (Oxford University Press, 2002), ch. 16.
[12] Richard D. McKirahan, Jr. *Philosophy Before Socrates: An Introduction with Texts and Commentary* (Hackett, 1994), 378-80.

that there might a universal morality that transcends cultural boundaries. Relativism defined by reference to the human point of view, therefore, is not equivalent to relativism defined by reference to the point of view of a particular group of people occupying a particular place and time. On the first, but not the second of the two theories just distinguished, it is logically possible for an inorganic world (leaving aside the question of a supernatural being capable of functioning as an ultimate bestower of value) to contain value.

We need now to spell out the precise mechanism by which value attribution takes place on the mind-dependent theory. One view appeals to the concept of interest. Ralph Perry, for example, has expressed the view this way: "[*a*] *thing – anything – has value, or is valuable, in the original and generic sense when it is the object of an interest – any interest* (original emphasis)."[13] The concept of interest as it is used here is generic (and to that extent deviates from its everyday usage in casual discourse), in the sense of being neutral between different orientations, or between attraction and aversion, or between "for" and "against", as it were. What is opposed to having any interest at all in something is, therefore, to be completely indifferent or disinterested towards it. It is possible then to assign different types of values to things on the basis of the different kinds of interests of which they may be the objects. Customarily, two basic types of interests are distinguished: instrumental and non-instrumental. One way of capturing the distinction is in terms of what something does for us. Typically, for example, we say that when a subject is interested in an object because of what the latter can do for it, or its usefulness to the subject, the interest of the instrumental variety, and, correspondingly, the value that it

[13] Ralph Barton Perry, *Realms of Values: A Critique of Human Civilization* (Cambridge, Harvard University Press, 1954), 2-3.

gives rise to is instrumental value. Bamboo, for example, is of instrumental value to pandas, as a source of food.

However, since, as I noted a few pages back, the idea of something "doing" something "for us" is ambiguous, the concepts of "instrumentality" and "use" to some extent inherit that ambiguity. Let us revisit the example used earlier, about the beautiful scenery. Obviously, a beautiful scenery that lifts my spirit and soothes my soul is not useful to me in the same manner in which a hammer is, but that does not mean it is obvious that the capacity for lifting spirits and soothing souls cannot be cast as a kind of usefulness. Certainly there are sceneries that cannot do these things. Still, to the extent that my interest in the beautiful scenery, as given rise to by its spirit-lifting and soul-soothing capability, translates specifically into a desire for its preservation and an aversion to its perturbation, intuition seems to protest against treating this interest as on a par with the interest one has in a hammer. How we understand and use "intrinsic", it seems, turns on what we take "in and of itself" to mean. Interpreted relationally, it supports one sense of intrinsic value; interpreted non-relationally, it supports another.

2.3 Varieties of Intrinsic Value

Intrinsic value attributed on the basis of human interest is properly called "anthropocentric intrinsic value", a term I have adopted from Holmes Rolston, Jr. [14] The type of human interest that gives rise to anthropocentric intrinsic value is exemplified by the kind of interest we take in beautiful landscapes and other things we feel protective towards. Alternatively, if "intrinsic" and "in and of itself" are defined as "existentially

[14] Holmes Rolston, III *Environmental Ethics: Duties to and Values in the Natural World* (Philadelphia: Temple University Press, 1988), 114.

independent of any relation to human perception and passion', then "anthropocentric intrinsic value" would be a contradiction in terms, and "intrinsic value" would instead refer to a non-relational, mind-independent property. Now our question is whether either anthropocentric intrinsic value or non-relational mind-independent intrinsic value is capable of grounding moral considerability, specifically by qualifying something as bearer of rights.

I don't believe that anthropocentric intrinsic value can support moral considerability. If it could, then many things would have to be admitted as members of the moral community that we otherwise feel should not, cannot and do not belong. It strains credulity to think of physical objects, however much may care about them, as genuine rights-holders. The intuition seems to be that to qualify for rights, an entity has to be intrinsically valuable in the same way in which an individual human being – the paradigmatic case of an entity of bona fide moral standing – is. The key difference between individual human beings and things we can take an interest in, in virtue of which the former but not (necessarily) the latter can bear rights, is precisely the difference between the *subject* and the *object* of interests. Unlike being the object of an interest, being an entity that *has* interests of *its own* is a non-relational property. It must, therefore, be the non-relational and mind-independent kind of intrinsic value attributable in accordance with the realist/objectivist/Platonist theory of value that can provide for the grounding for moral considerabilility.

Joel Feinberg has articulated one such account, which executes the connection between interest and moral considerability by means of the notion of right, and by derivation, the notion of something having a "good of its own". According to Feinberg,

"the sorts of beings who *can* have rights are precisely those who have (or can have) interests."[15] Things that have interest have a "good of their own", for which we can do things for "their own sake/well-being". For Feinberg, interests "are compounded out of *desires* and *aims* (original emphases)",[16] and do not, therefore, apply to entities without rudimentary cognitive life or conative capacities. On this conception of interest, the moral community includes things besides human beings. Of course, one may agree with Feinberg that having rights depends on having interests without agreeing with his particular conception of what it is to have interests. Many have done just that.

Some, for example, have seen no reason why granting rights to individual animals might not be the logical antecedent to granting rights to collections thereof, such as species, and then to larger entities still, such as the ecosystem and the natural environment as a whole.[17] Those who hold this view, including, most prominently, those who subscribe to environmental holism and/or ecocentrism and/or deep ecology, hold, or ought to be willing to support, the view that individual living organisms are the only kinds of entities to which interest and rights can be attribute.[18] This is a confusion, both encouraging and possibly encouraged by the dubious graphic metaphor of "expanding the circle of rights". Sets may in some crude sense be larger than individual members thereof, but the former does not relate to the latter in the same way in which a larger circle relates to a smaller one, concentric or not. And what is true of individuals is not necessarily true

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[15] Joel Feinberg, "The Rights of Animals and Unborn Generations," in his *Rights, Justice, and the Bounds of Liberty: Essays in Social Philosophy* (Princeton, NJ: Princeton University Press, 1980),167.
[16] Feinberg 1980, 168.
[17] Roderick Frazier Nash, *Rights of Nature: A History of Environmental Ethics* (Madison, WI: University of Wisconsin Press, 1989).
[18] Lawrence, E. Johnson, for example, speaks of "eco-interest". See his *A Morally Deep World: An Essay on Moral Significance and Environmental Ethics* (Cambridge University Press, 1991), esp. ch. 6. By his logic, there is no reason why we must stop at "eco-interest", and we ought to be able to speak of planetary interests, galactic interests, and even cosmic interests.

of sets of them. If anything, individualism is more likely to be *opposed* to than compatible with holism, the view that treats wholes as the moral patient in their own right, as the direct subject of moral concerns and considerations, as an entity with its own rights, interests and intrinsic value. If anything, there is logical tension between holism and individual insofar as each consigns the other to derivative status.

For example, in virtue of its aggregationism (with its holistic orientation), classical utilitarianism has difficulties accommodating individual rights. And even a nominally dualistic view that seeks to honor both the good of the whole and that of the individual, such as Arne Naess's ecospheric egalitarianism according to which all forms of living things have equal value, would be coherent and practicable only if the idea of equality is adequately defined, and it contains a lexical ordering of the two that allows conflicts between them to be adjudicated should they arise, which they are bound to do. At any rate, the possibility for conflict between the common good and individual good cannot be defined away, certainly not by means of a suspect metaphor. Human rights, animal rights and rights of the environment as a whole, do not occupy different points on a conceptual continuum.

If holism or eco-centrism or deep ecology cannot be established by extending individualism willy-nilly. might they be established on independent grounds? Can the environment as a whole be shown to be a genuine bearer of right and as such, a claimant of the duty of justice, because it possesses non-relational, mind-independent intrinsic value? Holmes Rolston Jr., for example, rejects the view that nature has anthropocentric intrinsic value and argues, with other environmental holists, ecocentrists and deep ecologists, that nature has intrinsic value of the non-anthropogenic, mind-independent

variety (arguably in addition to, rather than instead of, having anthropogenic intrinsic value). This value, says Rolston, is "objectively there – discovered, not generated, by the valuer."[19] On such a view, evocative of Plato's *Euthyphro*, insofar as we take an interest in the natural environment, the interest does not constitute but rather *responds to* the intrinsic value of the environment.

Some versions of moral realism would, however, allow our interest to constitute *evidence* for the mind-independent intrinsic value of the natural environment, in which case its value would in turn *explain* our interest in it (which means that if it is denied that there is evidentiary relation between the two in one direction, then it must also be denied that there is explanatory relation in the other). What it would be incumbent upon holists, ecocentrists and deep ecologists to show, then, is how the fact about the mind-independent intrinsic value of the natural environment is to be understood, exactly.

2.4 Ecology and the Value of the Natural Environment

If it is a mind-independent fact that the natural environment has intrinsic value, what kind of fact is it, and what kind of a property is this value? It seems *prima facie* implausible to treat such a fact as a natural fact on a par with facts about, say, the existence of the oceans and animals species. For one thing, the latter are observable while the first is not, at least not in any straightforward sense of the notion of observation. We can treat it as a moral fact, and mind-independent intrinsic value of a moral property, and opt to be agnostic on the question of whether it is natural or non-natural. Less hangs on how we answer this question than on how we account for the relationship between such a moral fact and other, non-moral, natural facts about the natural environment, that is, such

[19] Rolston, Jr. 1988, 116.

a moral property on the one hand and other properties of the natural environment on the other. One possibility I want to examine closely here is what many moral realists call the supervenience view of moral properties or moral facts. According to this view, moral facts and properties supervene, at varying degrees of strength, on non-moral facts and properties.[20] The supervenience relation is typically taken to be a nomological, law-like, relation, such that the obtainment of the supervenience base necessitates – in some specific sense – the obtainment of the supervening properties or facts.

On a supervenience view of the mind-independent intrinsic value of the natural environment, such value is constituted by, in the specific sense of supervening upon (and therefore "tracking") some non-moral, natural facts about the natural environment that are discoverable through scientific studies, including ecology. Both the supervening fact and the facts that form the supervenience base are, of course, mind-independent. I don't believe that this view of the nature of the mind-independent intrinsic value of the natural environment can be sustained. There is no way, as I shall try to show, to establish the supervenience relationship without reference to human perception and passions, interests and desires. In other words, while we can discover the non-moral, natural facts about the natural environment that purport to constitute the supervenience base, the supervenience relation itself is something that can only be stipulated or imposed, not discovered. The claim that empirical findings about the natural environment logically compel attribution to it of mind-independent intrinsic value is, therefore, illegitimate.

I want to defend my charge by arguing backwards, as it were. I shall begin with the basic assumption that if it is in fact the case that natural environment has mind-

[20] David O. Brink *Moral Realism and the Foundations of Ethics* (Cambridge: Cambridge University Press, 1989), 172-180.

independent intrinsic value, then that value would be the environment's "own sake" (or the good of its own) for which human beings are morally required to act. What exactly, then, is involved in so acting? We can approach the question in one of two ways, either in terms of the notion of rights, or in terms of the notion of interest. If having intrinsic value is what gives rise to rights-worthiness, then it ought to be possible in principle to deduce from the affirmation of intrinsic value an account of what it is the entity in question has rights *to* insofar as it has rights. After all, if something can have rights, then it does not just have rights in general, as an undifferentiated glob of a thing, what it has are particular rights to particular things. Similarly, if we appeal to the connection between having interests and being intrinsically valuable, then, of the entity to which we attribute intrinsic value, we must be able to give at least a rough account of what its interests are.

According to the supervenience view of intrinsic value, this value supervenes on various combinations of non-moral, natural facts about the thing in question. Acting for the sake of the intrinsic value of this thing, for its own good, then, ought to involve acting in ways that seek to maintain those non-moral, natural facts about it on which its intrinsic value supervenes. For example, on the view that the intrinsic value of each human being supervenes on the fact that we are, say, rational creatures capable of determining our own ends, and acting on our own conception of the practical law, then among the rights and interests we can be said to have, on the basis of our intrinsic value, must be the right to and the interest in the maintenance of those conditions under which we can continue to function as rational creatures capable of determining our own ends, and acting on our own conception of the practical law. Alternatively, if we hold that the intrinsic value of individual human being supervenes on their sentience, then not having pain deliberately

inflicted upon us must count among our basic rights and interests. By this logic, if the natural environment has intrinsic value which supervenes on non-moral natural facts about it, then acting for its own sake must involve refraining from perturbing these facts. And insofar as we hold – which we may or may not do – that nature has rights and/or interests, these facts about nature must provide the content of their rights and/or interests. But without an accurate account of what these facts consist in precisely, we would be unable to say when we have violated a basic right or thwarted a basic interest of the natural environment.

The catalogue of non-moral, natural facts on which many if not most environmental holists, ecocentrists, and deep ecologists believe the mind-independent intrinsic value of the natural environment supervenes include familiar ones such as the biodiversity and ecological equilibrium, homeostasis, self-regulative feed-back mechanism, and symbiotic relationships, or more generally speaking, some kind of systematic interconnectedness among living organisms, species and inorganic entities. But just what is so special about these facts such that we ought to treat them as normative and seek to maintain them until perpetuity? Can we establish their normative status without any reference to human interest and desires? In other words, can holism, ecocentrism and deep ecology be coherently non-anthropocentric? I do not think so.

Let me begin by zooming out and taking a sweeping view of the whole span of the geological timeline. While earth is, so far as we know at least, the only planet with life on it, it has not always had life on it. Life made its debut when earth was about 1.6 billion years old, an event, along with biological evolution by means of natural selection are, in the final analysis, metaphysically contingent, in the sense that they are not

preordained or otherwise metaphysically necessary. The condition of biodiversity took eons to take shape (mammals evolved only about 70 million years ago). The very notion of ecology, which deals with the relationship between living things and their environment (and related notions with the "eco-" prefix, such as "ecosphere" and "ecosystem") *a fortiori* presuppose the existence of life and have no application where, and when, this condition is not satisfied. Now if anything is indifferent to human interests, geology is. Suppose we could consider the question about value from behind some kind of a "veil of ignorance" that blocks out any and all knowledge of or reference to human desires, interests and preferences, that is, suppose we could perform the feat of mental contortion and think from the geological point of view, what reason might we have for thinking that the existence of life is intrinsically preferable to its non-existence, or that greater biodiversity is intrinsically better than lesser biodiversity, or that the continued existence of any particular species, such as *Home sapiens*, is intrinsically better than its extinction?

I do not see how there can be any reason, from the designated point of view, why we should think any of these things. From the planetary and geological point of view, *any* one possible condition of the earth is equivalent to and indistinguishable from any other. The point is at once profound and trivial; the attempt to step outside the human point of view in regard to the question of value is fundamentally a self-defeating one. We can, of course, shift among different human points of views, but what we cannot do is to step outside *the* human point of view altogether. We cannot really think like a God, though we can easily think like a human thinking as though she was thinking like a God. Nor can we really think like a bat. The most we can do is to think like a human who pretends to think like a bat. So while the holists, the ecocentrists and the deep ecologists tend to speak as

though they are representing the interests of the non-human world at large, if in fact they are deluded about what the interests of the non-human world are, or that it even has any interests of its own at all, then it is not clear why we might not consider their posture, while seemingly high-minded, in fact a form of hubris and paternalism, albeit disguised as disinterested benevolence. I agree with Stephen Jay Gould that we necessarily err in believing that human beings, with our finite intellectual capacities (and limited imaginations), can think (or indeed feel) on the geological scale.[21]

It would not do to try to account for the intrinsic value of the natural environment, in particular the ecosphere, by appeal to higher-order concepts such as orderliness, which is inherently impartial with regard to the existence of organic beings. For example, Rolston's claim that the ecosphere is good in itself insofar as it has the distinction of not being some "accidental jumble" can be thought of as illustrating such an attempt. But what is being claimed here exactly? What makes some collection of things an accidental jumble? If by "accidental" is meant "disorderly", "arbitrary", "random" or "unintelligible" or "inexplicable", then the question is not answered but only displaced. We still need, that is to say, to give an account of what any of these other concepts mean. Obviously, the concept of order is not uniquely applicable to conditions in which living organisms are present. Insofar as the universe is governed by laws of nature, order extends as far as the reaches of mathematizability, life or no life. Therefore, it would be but a kind of prejudice to think of, say, the conditions on earth before life's debut, and possibly after life ceases to exist, as characterizeable as "accidental jumble". Those conditions would still be pervaded by *orderliness*, only the kind in which life does not

[21] Stephen Jay Gould, "The Golden Rule – A Proper Scale for Our Environmental Crisis," in *Reflecting on Nature: Readings in Environmental Philosophy*, eds. Lori Gruen and Dale Jamieson (New York: Oxford University Press, 1994), 37-9.

take part. But suppose we could distinguish between states of the world that are orderly and states of the world that are not (that is, states of mere "accidental jumbles"), is it not nonetheless distinctly *human* to prefer orderliness to disorderliness? I do not know how the holists could answer this negatively and be coherent.

A still weaker type of argument for the non-anthropocentric intrinsic value of nature would be those that appeal to such notions as the integrity, stability, harmony, balance and beauty of the natural environment. First, these concepts are notoriously difficult to define.[22] As such, they are resistant to precise measurement and operationalization and for that reason of limited usefulness to practicing scientists and other decision/policy-makers. For the same reason, their deployment can be of limited use in yielding concrete policy recommendation or moral imperatives. Secondly, unlike "homeostasis", "feed-back mechanism" and "equilibrium", these notions are overtly value-laden and carry unambiguously positive connotations. To put this more bluntly, they are virtue terms. Lack of integrity, arbitrariness, instability, disharmony, unbalance and ugliness are no neutral facts. They are typically treated as vices. Therefore, the deployment of concepts fully-loaded with clear normative connotations has the obvious and unavoidable consequence of rigging the argument. One is naturally but surely at a rhetorical disadvantage, if nothing else, should one be taken to be opposed to such virtues as integrity, stability, harmony, balance and beauty and to be accepting of such vices as their respective opposites.

Thirdly, it is not obvious whether human beings are supposed to stand to gain, in either the short or the long turn, from the maintenance of these environmental conditions,

[22] Kristin Shrader-Frechette "Practical Ecology and Foundations of Environmental Ethics," *Journal of Philosophy*, Vol. 92, No. 12 (Dec., 1995), especially pp. 627-32.

assuming we can be sufficiently precise about in what they consist. After all, the desirability of "harmonious co-existence" consists in its benefiting the parties to a relationship rather than (or is it "as well as") the relationship itself anyway. This is why "harmonious co-existence" is valued in the context of, say, international, inter-racial and interpersonal relations. But if concern for the well-being of the whole of which humanity is a part is even in part motivated by concern with the positive spill-over effect for the well-being of that part, it seems questionable to call the first concern non-anthropocentric.[23] It may be more appropriately titled *indirect* or subtle, anthropocentrism, to be contrasted with *direct* of overt or express anthropocentrism. That would, however, be more of a stylistic difference than a substantive or doctrinal one.

One interesting implication of this analysis is that it exposes the paradoxical nature of the exercise of determining what is *relevant from a moral point of view*. It will be recalled that the possession of rationality, of freedom of the will, of language, of sentience, and of conative capacity as the mark of the morally considerable have all been rejected on the ground that they are arbitrary and irrelevant from the moral point of view. Any such rejection must presuppose a meta-criterion for deciding arbitrariness or relevancy *from the moral point of view*. This in turn calls for a meta-meta-criterion for determining the meta-criterion. We then face the following dilemma. If we try to eliminate the arbitrariness from *within* a pre-defined moral point of view, we are bound to fail because the argument must presuppose what it alleges to refute. But if we try to do it from *outside* the moral point of view, we become involved in an infinite regress as we search for the line that separates the moral point of view and other points of view. So if

[23] Andrew Brennan *Thinking about Nature: An Investigation of Nature, Value and Ecology* (Athens, University of Georgia Press,1998), especially chs, 5, 8-10.

human-centeredness – whatever this may mean – is morally arbitrary, a claim I do not agree with, it is not clear why its denial should be any less so. In other words, we need to establish why it is not arbitrary (moral or otherwise) to consider any demarcating criteria arbitrary. Either we must concede that the criterion for arbitrariness must be arbitrarily determined or we must abandon the notion that reference to human desires and interests is in principle arbitrary. More pointedly, given the nested nature of values and principles, we cannot get around arbitrariness on any one level of abstractness in any other way than arbitrarily as judged from a higher level of abstractness.

The natural environment does not have interests or rights, or a good of its own. What our tendency to sympathize with the ecosphere, especially in response to increased scientific knowledge about its wonderful workings, that is, to treat it *as though* it had interests, rights and a good of its own really shows is that we are capable of taking aesthetic, spiritual and therapeutic, or what are often classified as non-instrumental, interests in the environment. I believe that the anthropocentric intrinsic value of the natural environment can be satisfactorily accounted for by a theory of environmental justice that treats of human beings, and perhaps some animals, but not the environment as such (as a whole, say), as legitimate members of the moral community and beneficiary of justice. So long as the intrinsic value of the environment is grounded in (non-instrumental) human interests, it would be possible to measure it by measuring both the absolute intensity of the interests in terms of which they are defined and their relative intensity compared to other, instrumental interests in the environment.

To be sure, some of the considerations that undergird liberalist claims about the centrality of justice to morality may conceivably be appropriated to support the case for

justice for the environment. For example, it may be argued that justice offers the surest protection of whatever an object is entitled to, given the kind of trumping power, as it were, often attributed to the notion of rights, such that unless the nature of normative constraints upon our conduct towards nature is conceived of in terms of it, there is little hope that nature would actually be given its due. But the power of rhetoric by itself provides no justification for the content of the rhetoric. Indeed, stronger still, such consideration ought not to be admissible in the court of philosophical justification. While "justice for the environment" is reminiscent of (because it bears superficial resemblance to) "justice for women/blacks/other minorities", and offers a catchy sound bite and potent rallying cry for the greater environmental movement, the philosophical soundness of what it asserts or assumes does not pass muster.

2.5 Centrism

What I have tried to show with my argument so far is what might be called the "paradox of non-anthropocentrism," which is that any attempt to defend it must presuppose its denial. Indeed, I have tried to suggest that the only way to argue for non-anthropocentrism is by presupposing the truth of what is intended to be rejected. This points towards two deeper issues. I have, in the foregoing argument, assumed that the meaning of "anthropocentrism" and "centrism" are relatively clear. But we must not let that assumption go unchallenged. What does it mean for humanity to be at the center of the world? Indeed, what does it mean for there to be a center at all? In this final section, I wish to address these knotty questions that really seem to lie in the background of the debate about what environmental justice is or can be.

Literally speaking, centrism is a form of exceptionalism: being at the center of anything is to occupy a pretty special place, though it is but one of many ways of being exceptional. Our use of the concept of center transcends its original geometric meaning, which is the one assumed in, say, “heliocentrism” and “geocentrism”. Depending on what is assumed to be the norm, there are different ways for something to be exceptional, to claim the “center”. There are, therefore, varieties of centrism and exceptionalism, and until and unless we make clear exactly what is meant, that is, our background assumptions, labels such as “anthropocentrism” or “human exceptionalism” have little import. In addition to geometric centrism, there is also what we might call normative centrism. The idea of “Euro-centrism”, for example, is not that Europe is exceptional in the sense of being literally located at the center of the surface of the earth, but rather that, roughly speaking, the European perspective on history, culture and morals is the only one that is valid. Both the geometric and the normative senses of the notion of centrism are to be distinguished from a third, which we might call teleological centrism. This is the idea that within the context of some closed system there is some “final end”, a telos, for which all entities and occurrences in it are functionally or instrumentally subservient. To be the telos within a closed system is to be exceptional in a specific kind of way.

Notably, however, teleological centrism, unlike the other two varieties of centrism, makes etiological assertions or has etiological implications about those other things besides the telos that are instrumental for realizing it. It speaks not just to the ahistorical issue of their supporting role in relation to something else, at some specific point in time, but the separate and largely independent historical or genetic questions of how and why

they came to be that way, their purpose of existence, or *raison d'etre*.[24] It contends that what is of instrumental value exists for the sole purpose of realizing that value. But of course, the ahistorical and the historical claims of instrumentality are mutually independent. That something is instrumentally useful to some agent for some purpose at some particular point in time does not mean that it came into being for the purpose of fulfilling that role. Conversely, that something may have been specially created for and provided to somebody does not mean that the intended beneficiary will ever have a use for it or will find it to be useful in exactly the way intended by the creator.

It is important to distinguish clearly between the distinction among the three different senses of centrism on one hand, and the distinction, relative to each sense, among different particular thesis of centrism. The questions of whether there is a spatial center to the universe, of whether the universe as we know it has been created for some specific telos, and of whether among the entities that populate the universe some are exceptional in the specific sense of being capable of creating values, are mutually independent. One may accept any number or none of these theses. And the more specific choices between heliocentrism and geocentrism, or between Euro-centrism and US-centrism, or between teleological anthropocentrism and teleological non-anthropocentrism (say, teleological ecocentrism), have meaning only to those who accept the relevant background assumption. Failure to keep this distinctions and meta-distinctions clear could easily lead one astray.

[24] For an illuminating discussion of teleological explanations, see Larry Wright's *Teleological Explanations: An Etiological Analysis of Goals and Functions* (Berkeley: University of California Press, 1976.) See also Michael Ruse's *Taking Darwin Seriously: A Naturalistic Approach to Philosophy* (New York, NY : Blackwell, 1986), especially the conclusion.

There has been, for example, an influential view whose proponents include such notable scholars as the historian Lynn White, Jr. and the philosopher Mary Midgley, which places a great deal of the blame for humanity's current environmental predicament at the foot of "modern science', whose exploitative posture towards the natural environment is in turn traced to its Christian roots, or more precisely, the belief that the world has been created to serve human interests. White writes that "we shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man."[25] But this is based on dubious logic. If God has created the world for humanity, he has created it for *all* human beings, and it would follow more or less straightforwardly that each generation of human beings are morally obligated to care for God's creation so it can be passed on in good condition to posterity for them to *use*. But use is not to be conflated with abuse, proper usage with ill-usage, or careful husbandry with wanton exploitation or wasteful spoilage, or exclusive use by some with shared use by all. While teleological anthropocentrism does condone the *proper* use, which includes, of course, the fair sharing, of what "has no reason for existence save to serve man" by *all* men, the improper use and unjust share of it made or claimed by *some* men at the expense of others does as much violence to nature itself as it does to the original intent behind the creation and of the terms of use.

Midgley, for her part, puts the point thus: "As Roy Porter says, 'In a single intrepid stroke, Descartes had disinherited almost the whole of Creation – all, that is, with the exception the human mind – of the attributes of life, soul and purpose which had infused it since the speculation of Pythagoras and Plato, Aristotle and Galen'. The

[25] Lynn White, Jr., "The Historical Roots of Our Ecologic Crisis," *Science*, Vol. 155, No. 3767, March 1967, 1203-7.

physical universe no longer seemed to be what Plato had called it, a mighty living creature. It was simply a more or less infinite pile of raw material provided for humans to exploit."[26] But why should the fact that the physical universe is no longer a "mighty living creature" *mean* that it must therefore be nothing else but "a pile of *raw material provided for humans to exploit*", which is essentially teleological anthropocentrism? Plainly, the answer is that it does not mean that at all. The physical universe might be neither. It might just be a collection of stuff, that has not by design been provided by anybody for anybody to be used for anything. But if teleological centrism has no credibility, not only does the fall of the kind of classical panpsychist metaphysics and its cosmic holist underpinnings not entail the truth of teleological anthropocentrism, by the same logic, nor does it follow from the rejection of teleological anthropocentrism that any other substantive thesis of teleological centrism, such as environmental holism, ecocentrism or deep ecology, must be true.

But the invalidity of teleological centrism (or what might be somewhat awkwardly but informatively called teleologic centric nihilism) does not entail the invalidity of all other varieties of centrism or exceptionalism. So far as the place of human beings in the universe is concerned, that we are not exceptional in the sense of being the telos nonetheless leaves open the possibility of our being exceptional in some other ways. In particularly, it does not preclude the view that human beings, and perhaps by extension entities with some functional equivalent of a mind, are exceptional as the sole creators of value in a world of facts. In fact, the mind-dependent theory of value, a

[26] Mary Midgley, "Souls, Minds, Bodies and Planets," in *Philosophy, Biology and Life*, (Supplement to *Philosophy, Royal Institute of Philosophy Supplement*: 56), edited by Anthony O'Hear (Cambridge: Cambridge University Press, 2005), 101.

variety of centrism in its own right (though not teleological centrism), affirms one such (and arguably the only) possibility. Normative anthropocentrism, therefore, may be a respectable thesis even though teleological anthropocentrism decidedly is not.

In conclusion, affirmation of the instrumental usefulness of various aspects of nature to human purposes does not require the truth of teleological anthropocentrism since it is perfectly well capable of being established on the basis of the mind-dependent theory of value. To the extent that the concept of instrumentalism about nature inherits this ambiguity with respect to its metaphysical underpinnings, it may be advisable to distinguish between strong and weak instrumentalism. Strong instrumentalism, but not weak instrumentalism, commits one to teleological anthropocentrism. While weak instrumentalism is non-committal with respect of teleological centrism, it does presuppose normative centrism, in particular, as instantiated by the mind-dependent theory of value. Strong instrumentalism is false (because teleological centrism is), but weak instrumentalism is true, or at least it is well worth defending.

Just as important, I hope to have shown with the foregoing analysis that it is hazardous to take the meaning of the notion of anthropocentrism and the notion of centrism for granted. In regard to the interpretation of the concept of environmental justice I have tried to defend in this chapter, less hangs on whether we should label it "anthropocentric" than on how we might derive from it concrete maxims that protect the environment from unsustainable and abusive treatment, that promote conservation and stewardship, and wise and fair use by all of humanity across generations. This leads us then to the principle of environmental sustainability, which is now widely acknowledged as a constitutive principle of environmental justice. What is also widely acknowledged is

that this is a fiercely contested notion, open to diverse and often competing interpretations. In chapter 3, I take up this cluster of questions.

Ch.3 Understanding "Environmental Sustainability"

3.1 The Issue

The concept of sustainable development was baptized in the *Brundtland Report*, otherwise known as *Our Common Future*, produced by the world commission on the economy and development and published in 1987. The concept was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" .[27] It is intended to convey the belief in, or at least the hope for "the possibility for a new era of economic growth, one that must be based on policies that sustain and expand the environmental resource base. And we believe such growth to be absolutely essential to relieve the great poverty that is deepening in much of the development world."[28] The notion of "sustainable development", on this interpretation, is short for "environmentally sustainable economic development".

The notion of sustainability, however, has proven to be plastic and versatile. As the economist Herman E. Daly has put it: "One way to render any concept innocuous is to expand its meaning to include everything. By 1991 the phrase [sustainable development] had acquired such cachet that everything had to be sustainable, and the relatively clear notion of environmental sustainability of the economic subsystem was buried under 'helpful' extensions such as social sustainability, political sustainability, financial sustainability, cultural sustainability, and on and on. We expected any day to hear about 'sustainable sustainability'."[29] Such fate, unfortunately, befalls many a stock-

[27] United Nations Commission on Environmental and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), 8.
[28] *Our Common Future*, 1.
[29] Herman E. Daly, *Beyond Growth* (Boston: Beacon Press, 1996), 9.

in trade concept for philosophers and other scholars. One writer has said, for example, in regard to the concept of "right", that "as [it] is stretched further and further beyond its proper domain, it is also emptied of more and more of its distinctive content."[30] These concepts are caught in a dilemma. On the one hand, they are subject to abuse by the unscrupulous, who use them promiscuously as slogans to pay lip service, while on the other hand, because of this, they are shunned by the more disciplined for whom the baby, alas, must go the way of the bathwater.

Both tendencies should be resisted. All concepts have the potential to be co-opted and abused, but such is the nature of human language. Wittgenstein notwithstanding, at least in academic discourse, it remains a worthy goal to define or otherwise explicate our concepts as clearly as possible, and to use them responsibly, that is, in ways bound by their meanings or definitions. "Sustainability" is a meaningful and useful concept, in environmental literature and beyond. Still, neither too much nor too little should be expected of it. What we should rest content with is the "distinctive content" of the concept to the extent we can determine it. I am concerned to do that in this chapter. I suggest an interpretation of the concept of environmental sustainability that is suitably precise and genuinely useful for formulating principles of anthropocentric environmental justice, that is, equitable distribution in environmental goods and bads among human beings. Since the concepts of environmental sustainability and sustainable development have been so exhaustively if not exhaustedly analyzed, it certainly appears that anything worth saying (and much that may not be) has already been said on the topic. Or maybe not.

[30] L. W. Sumner, *The Moral Foundation of Rights* (Oxford: Oxford University Press, 1987), 15.

Several things especially strike me about the literature on sustainability. The first is the tacit assumption that the significance of the notion is confined to its use in the environmental literature. Yet we readily and competently use the concept in many different kinds of contexts. We should expect a certain consistency in how we use the concept. If there is interest, prudential and/or moral, in sustainability, presumably it would not be confined to environmental matters. Secondly, there seems to be something of a haze as to what kind of a question we are asking when we ask what "sustainability" means, especially in the environmental literature. Some might be seeking a *qualitative* definition of the conception, in which case an adequate answer would need to contain an account of the formal properties something must have in order to be considered sustainable. Yet others might want an account of *how* the sustainability of some specific sort of thing is to be achieved. Which one is sought by a researcher is a matter of the specific theoretical interests and concerns of the person asking the question. Clarifying what these interests and concerns are may help both to delimit the scope and to define the methodology of the inquiry about how to answer it, whether it is through conceptual analysis, quantitative analysis, empirical studies or something else. Thirdly, it is commonplace now to complain that the imperative of sustainability somehow distracts us from being concerned with the interests of the present generation and the short-term. While the complaint is legitimate, I believe it undermines, not the concern with sustainability, but rather it alerts us to the need to put this concern in perspective, a need that would in any case be inherent rather than extrinsic to a thoughtful use of the concept. Properly construed and used, the norm of sustainability has no such implication.

I will try to address each of these issues. With regard to the first, I would like to explore the possibility of both restricting and broadening our understanding of sustainability such that we can make sense of not just *environmental* sustainability, but also concepts such as political sustainability, economic sustainability, social sustainability and so forth. With regard to the second, I characterize my studies in this chapter as first and foremost a conceptual analysis. The concept of sustainability is, for this study, qualitative. The answer to the question of what "sustainability" means is logically prior to technical questions of how to achieve it. While the latter are of paramount importance in practice for the purpose of policy debate and institutional design, a definition of "sustainability" as a qualitative concept should not be expected to be loaded with substantive answers to them. In regard to the third issue, I would like to address it by situating the norm of sustainability as a norm of environmental justice relative to the broader (though *not* separate) concerns of social justice.

A good place to start might be to realize that the notion of sustainability is neither irreducibly moral nor useful only in the environmental literature. Intuitively, to say of something that it is sustainable is to state a non-moral fact about it. That we would like some things but not others to be sustainable is a distinct issue, and would seem to warrant separate analyses. However, the powerful positive, i.e., *normative*, connotation of the concept is also undeniable. Methodologically, this suggests two things. First, to the extent that "sustainability" is not irreducibly moral, we should be able to formulate its meaning independent of facts about its moral use both in the environmental literature and beyond. Secondly, if such an account is possible, it ought to be able to help define the constraints on both the use and the interpretation of the "sustainability" as a moral notion. The plan

is as follows. First I will offer a generic analysis of the concept of "sustainability". My contention is that the meaning of the predicate "sustainable" is context-relative, and depends on how we conceive of the thing to which we attribute it. The analysis will also anticipate the further analysis of the moral use of the notion, which will be argued for separately, in sections 3.3, 3.4 and 3.5.

3.2 "Sustainability" as a Dispositional Concept

A basic intuition readily identifiable regarding the concept of "sustainability" is that it has to do with something's ability to be sustained, i.e., to continue through time. This intuition places sustainability in the genus of dispositional properties, which enable their possessors to (reliably) behave in certain ways under specific types of conditions. Solubility is a dispositional property: something is soluble if it would dissolve when put in water. This definition for "solubility" contains three pieces of information, each of which is necessary and important for a proper understanding of it: (1) the subject of predication; (2) the condition under which the disposition to be defined manifests itself in some observable fashion; and (3) the nature of the manifestation. "Soluble" is predicable of material substance, the condition under which solubility would be manifested is exposure of the substance to water, and the nature of the manifestation is the dissolution of the substance.[31] Indeed, the conditional form is widely used in formulating definitions, sometimes of concepts that one might not otherwise suspect as being dispositional. C. I. Lewis, for example, has claimed that "We might say that attributing value to an existent, *O*, means that under circumstances *C*, *O* will or would, or probably will or would, lead to

[31] Rudolf Carnap, "Testability and Meaning", *Philosophy of Science*, 3, 1936, 419-471, and 4, 1937, 1-40.

satisfaction in the experience of somebody, *S*…"[32] The virtues are also typically defined dispositionally: courage, for example, is the psychological disposition in virtue of which an individual is likely to act in a certain way in certain types of situations.

I honor this intuition and intend to be guided by it in this study. The task, then, is to construct a definition of "sustainability", or perhaps more loosely, to arrive at an understanding of the concept, that allows me to answer two key and basic questions: (1) of what sorts of things do we attribute "sustainability", and (2) what it is that we are asserting about something when we say it is sustainable. The first question concerns the nature of the subject of predication by "sustainable", and it in effect involves two distinct questions: how many places the predicate has and what sorts of things the variable that hold these places range over.[33] The second question concerns both the truth condition for predicating "sustainable" and, according to truth-conditional semantics, the meaning of the predication.[34] The answer to the second question must contain two pieces of information: (1) facts about something we expect to obtain if it is sustainable, (2) the condition under which the facts obtain.

We might try to interpret "sustainable" on the model of "soluble", i.e., as a monadic predicate predicable of material objects or substances. When, then, is "sustainable" truly predicable of something? The crudest of intuition is that something is sustainable when it can continue into the future. But continue to what? To *do* something or to *be* something? It seems possible that there may be different perspectives from which we might consider the temporal duration of one and the same material entity or substance.

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[32] C. I. Lewis, *An Analysis of Knowledge & Valuation*, (LaSalle, IL: Open Court Publishing Co. 1946), 512.
[33] Donald Davidson "The Logical Form of Action Sentences," in *Essays on Actions and Events* (Oxford: Clarendon Press; New York: Oxford University Press, 1980), 119.
[34] Donald Davidson, "Truth and Meaning," *Syntheses*, 7, 1967, 304-23.

Indisputably, one is the existential: we can and do speak meaningfully about things continuing to exist or be. But we should be suspicious about interpreting "sustainable" as (merely) the capacity to do this. There are a number of reasons. First, there is something *prima facie* awkward and deeply unconvincing about conceiving of the ability to continue to be as a disposition. The ability to continue to exist or be adds little to the notion of existence which already has an inherent temporal connotation. Existence, after all, must occupy temporal space of some magnitude. But existence is not itself plausibly conceived of as a power or capacity (and arguably, therefore, it is not a genuine predicate), and superfluously adding temporality to it does little to change that. The existential interpretation, therefore, threatens to reduce the notion of sustainability to triviality.[35] It reveals little of interest about the subject of predication, such as what genuine properties it has and what it is capable of doing because of these properties. Since neither existence nor continued existence is properly considered a behavior, it would seem to be meaningless to ask under what types of conditions is either to be expected. If anything, existence is itself the ontological condition under which any genuine behavior can occur.

Equally important, the existential interpretation does not do justice to the way we ordinarily apply the concept of sustainable and its variants in the sense that it is misleading on the question of which of an entity's constitutive properties actually matter to the attribution of sustainability. If what matters is the continued existence of the entity itself (and *in* itself), we would certainly need an account of the criteria for identity, an account that allows us to determine if an entity subsists or remains self-same from one moment to the next. Yet the tacit assumption that it is identity through time that we have

[35] William Kneale, "Is Existence a Predicate?" in *Readings in Philosophical Analysis*, eds. Herbert Feigl and Wilfred Sellars (New York: Appleton-Century-Crofts, Inc., 1949), 29-43.

in mind when we speak of some entity's continuation into the future is problematic. For example, in regard to an entity with a function or which is useful towards some purpose, then what matters so far as its continuation is concerned may well be whether it can continue to perform its functions and be useful, and *not* its identity. And whether something can do this depends not on whether its essential properties remain, but on whether those properties of the entity in virtue of which it is functional and useful in specific ways do. This strongly suggests that our sense of what aspect(s) and which constitutive properties of an entity are relevant to questions of its sustainability is reflective of our (pre)conception of the entity.

More explicitly, the parameter I have just alluded to by reference to which we can fix our point of view on an entity is the kind(s) of value(s) we see it as having. Value, as I discussed in some detail in the last chapter, is a higher-order property (natural to some, the naturalists about value, while non-natural to others, nonnaturalists about value) that supervenes on lower-order (and natural) properties. In applying the concept of sustainability, our attention in fact tends to be selectively focused on those properties on the basis of which the entity has the value we have antecedently attributed to it, consciously or otherwise. In other words, what would constitute an adequate answer to the question of what it means to attribute sustainability to some particular entity depends on the nature of the interest we have in its continuation into the future, which in turn depends on our interest in the entity. When this information is not forthcoming, then no interesting or significant answer can be produced.[36]

[36] Christopher Hookway, "Analyticity, Linguistic Rules and Epistemic Evaluation," *Thought and Language,* Supplement to *Philosophy,* Royal Institute of Philosophy Supplement: 42, edited by John, Preston (Cambridge University Press, 1997), 197-218.

A most familiar type of entity concerning which the question of sustainability often arises includes things with instrumental values broadly construed. I contend that what we mean in attributing sustainability to such an entity is that over an extended period of time they would retain such value. In this context, "sustainable" can be used as a synonym for "durable". We can illustrate this with the example of a bicycle, which we conceive of solely as a means of personal transportation (disregard, that is, complications such as the possibility that it is also an object with some variety of non-instrumental value). My sense is that our intuition would protest against calling a bicycle sustainable whose body lives on, so to speak, and whose essential properties, to the extent they can be determined, endure but whose function declines after some period of time. What is sustained, with respect to a sustainable bicycle, is its functionality. Whether something is sustainable in this sense depends, of course, on whether those properties on which their instrumental value supervenes remain intact through time. So it would presumably be immaterial to a bike's sustainability/durability whether its color fades over time since its function does not depend on its color.

Many entities besides material objects have instrumental value, most notably, inherently purposive or teleological entities such as social institutions, systems, public policies, social or individual practices and patterns of behavior. I call these entities "inherently purposive" for the straightforward reason that these are typically designed, devised or adopted as *means* for achieving certain *ends* or *telos*. As such, continued serviceability towards their intended ends, rather than existential continuation, should be what is relevant to the determination of their sustainability. I offer two examples, one in the form of an individual practice and the other that of a public policy. The practice of

credit card use is, incontrovertibly, inherently purposive, its purpose being, let us say, to meet an individual's need to finance a certain level of standard of living or specific projects. What best captures what we mean when we pronounce a pattern of credit card use sustainable? Not, I think, when we can adhere to it in the long term, period, as it were, but rather when we can adhere to it for extended period of time without gradually undermining or eroding its efficaciousness as a means towards its intended end (by, say, undermining the card-holder's financial well-being). Similarly, a government may put in place a policy whose goal is to keep certain sectors of the population, say, immigrants, under specific kinds of control. Whether such a policy is sustainable is a matter of whether it can continue in the long term to fulfill its original intent, say, to keep crimes down, or to mitigate social conflict, or to protect the native population in respect of job opportunity, or whatever else it may be.

Now one might suggest at this point that the existential interpretation of the concept of sustainability that I argued against earlier may in fact be suitable for analyzing the application of the concept of sustainability to entities of intrinsic value. This may be motivated by the thought that to the extent that something is not valued for what it can do, that is, for its functions and services, then it is valued for what it is in itself. Therefore, the argument goes, its ability for existential continuation ought to provide sufficient logical ground for the attribution of sustainability. I don't find this convincing. As I discussed in detail in chapter 3, objective existents may be intrinsically valuable in either of two senses: when it is the object of some agent's non-instrumental interest or when it is an interest-holder in its own rights. As is instrumental value, intrinsic value is ontologically dependent on other properties. If and when we attribute intrinsic value to a

piece of art on the ground that it is the object of a non-instrumental interest, such attribution must be explicable in terms of some *other* properties the piece of art has, such as certain "primary" and "secondary" qualities understood in the Lockean sense, to which we cognitively or noncognitively respond in certain ways. The belonging of a loved one who has passed away can be intrinsically valuable on the ground that it is the object of a non-instrumental interest, still, such interest is itself expected to be explainable or justifiable by reference to the entity's pedigree. This means that existence by itself, whether or not one thinks of it as a genuine predicate, cannot be the basis of intrinsic value, for if it was, then everything that exists must be intrinsically valuable for no other reason that that it exists, which is absurd. This leaves us with the option of interpreting "sustainability" as it is applied to intrinsically valuable entities in a way analogous to how we interpret it in connection with instrumentally valuable entities: it refers to the entity's ability to maintain its intrinsic value. This would depend on whether those (lower-order, natural) properties on which the entity's intrinsic value supervenes remain intact through time.

We would be remiss if the analysis did not consider how the concept of sustainable is used when applied to certain types of events, such as changes in population for a geographic area or sediment accumulation in river beds as a result of dams slowing down the flow of the river. These social and natural events are not themselves actions (which are a type of event), though they may be the aggregate result of individual actions. They are, moreover, not inherently goal-oriented. So how the notion of sustainability applies to them would not yield readily to the analysis meant for goal-oriented entities. However, one crucial element of that analysis must be retained, which is that

"continuation into the future" (or "repetition" for "continuation" if the event in question is clearly of an episodic nature) in the long term as an unanalyzed concept is not what is relevant in assessing an event-type's sustainability. Instead, what is relevant is what impact it might have on certain pre-existing conditions as defined or constituted by specific limiting factors when continued or repeated for extended periods of time. To say of an event-type (to be distinguished from event-token) that it is sustainable is to say that in the long-run it has no tendency to perturb or upset these conditions by bursting the bounds of their inherent limitations. Population growth for a region, for example, is said to be sustainable if it can continue *without threatening to lower the region's living standard by outrunning its carrying capacity as determined by its resource availability*. Similarly, a sustainable rate of sediment accumulation is one that does not tend to threaten the long-term health of a river's ecosystem or its function as a commercial waterway.

Of course, which pre-existing condition and which sets of limiting factors inherent to that condition are to provide the reference by which the sustainability of any given event-type is to be determined cannot be decided either *a priori* or indeed context-independently. It will depend on the interests, concerns and intentions of the person who is making the determination. How long must the long term be? There can and should be no *a priori* answer, for it necessarily depends on the issue at hand. This does not mean that the question as to the scope of the long term can be easily settled even if we do know what is at issue, however, it does impose certain constraints on the sorts of *telos* about which the question of sustainability, even as an *empirical* question, can intelligibly arise. Goals, purposes and ends can of course be episodic, short-term, medium-term or long-

term. The desire to have an apple at a specific moment in time constitutes a goal of the first kind. A short-term goal might include "going to the post office this afternoon to mail a letter", a medium-term goal might include "buying my first car before age thirty", and then a long-term goal might include that to achieve *eudaimonia*. The same classification also applies to the common goals and objectives of groups of individuals, say, a society or a nation-state. The question of sustainability really only arises when we speak of relatively long-term and constant goals. The importance of this point will become obvious when we discuss sustainability in the context of intergenerational justice, whose possibility presupposes, *inter alia*, that certain fundamental *telos* is passed on and remain relatively consistent from one generation to the next.

What I have tried to illustrate through the foregoing examination is that we ought to think of the disposition of sustainability as a dyadic relation. And there are three ordered pairs between whose two terms the relation of sustainability can hold: a certain inherently teleological or instrumentally valuable entity, its intended consequence or *telos*; an intrinsically valuable entity, its intrinsic value; an (inherently purposeless) event, social or natural, certain range of conditions on which the event has impact. While the exact phraseology may vary depending on the context, we might say that sustainability is the dispositional property in virtue of which something would consistently meet the expectations entertained with respect to it when continued or repeated over some extended period of time. This definition contains information about both the nature of the manifestation of the disposition and the condition under which the manifestation occurs. In everyday discourse, of course, we might omit mention of the second term, the

normative expectation, if it is obvious and/or widely understood. But it would nonetheless be implied or presupposed.

Whether the sustainability relation holds for something and its value depends on many factors and is subject to different forms of constraints. One and the same thing may be sustainable from the point of view of one type of limiting factor but not another. For example, a measure of medical treatment may be *medically* sustainable relative to its purpose if it is capable of being continued (say, if it does not have serious side effects) and consistently effective (say, if it does not induce rejection), but *financially* unsustainable if it depletes the patient's financial resources before full recovery. Tax-cuts policies may be, let us say, sustainable economically relative to the purpose of stimulating economic growth but not politically if it tends to erode political support for their supporters. Indeed, economic growth has been criticized as being unsustainable from different points of view. For example, Fred Hirsh has argued in his book *Social Limits to Growth* that, as the title indicates, economic growth is not *socially sustainable* because it fosters certain psychological pathologies such as a perverse and self-perpetuating competitiveness that undermines social cohesion.[37] Constructions such as "economic sustainability" and "political sustainability", on this construal, are significant (in this sense of being meaningful). Properly used, they can help alert us to the complexity of and nuance to sustainability assessment.[38]

"Unsustainable" and "unsustainability" are to be defined as the logical negation of "sustainable" and "sustainability". There are some general forms in which unsustainability can take. An unsustainable practice or institution may decline

[37] Fred Hirsch, *Social Limits to Growth* (Cambridge, MA: Harvard University Press, 1976).
[38] Christopher Peacocke, "What Determines Truth Conditions?" in *Subject, Thought, and Context*, edited by Philip Pettit and John McDowell (Clarendon Press, Oxford, 1986), ch.7.

functionally, i.e., yield diminishing utility, over time. This may lead to its eventually becoming a source of disutility relative to the purposes for which it was originally adopted. For example, excessive use of antibiotics can be unsustainable because over time its effectiveness towards its intended purpose is likely to wear off (by, say, inducing resistance). But an unsustainable practice or institution may also suddenly collapse, sometimes following upon incremental decline. In the Meadows and Meadows' 1972 book *Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*, the authors describe the "basic behavior mode of the world system" as "exponential growth of population and capital followed by [overshoot and] collapse".[39] Exponential growth of population and industrial production is unsustainable. Jared Diamond's *Collapse: How Societies Choose to Fail or Succeed* offers a large selection of examples of environmentally unsustainable practices that resulted in wholesale and relatively precipitous (that is, in historical terms) destruction of civilizations.

As particularly the cases in Diamond's book indicate, the destructiveness of unsustainable course of actions may go beyond the obsolescence of the practices and the institutions themselves. After all, if they are adopted in order to serve some specific purposes, their decline need pose, it might seem, no particular difficulty if it is possible to replace them with some other practices or institutions that serve the same purpose. However, since their functional decline results from the erosion of the underlying conditions necessary for their instrumental efficaciousness, alternatives that serve the purposes they no longer can, may or may not even be possible. When the environment has been degraded beyond repair, it can support no human population whatever economic

[39] Meadows and Meadows, *Limits to Growth: A Report by the Club of Rome's Project on the Predicament of Mankind* (New York: New American Library, Inc, 1972), 149.

system it might adopt. Similarly, if an unsustainable medical treatment kills the patient, the question of switching to an alternative treatment would not arise. As we will see, this becomes relevant when we use the concept of sustainability in a moral context. An unsustainable practice or institution poses greater danger if it not only self-destructs but also destroys the community at large.

A further clarification is needed. Intuitively, the failure to continue to meet some expectations in the long term is not the same as the failure to meet these expectations even in the short term. There is a sense that meaningful denial of sustainability presupposes the subject matter's short-term success in the relevant respects. For example, we might deny that the practice of praying is sustainable relative to its intended consequences, say, curing somebody of cancer. But arguably to do so would be misleading even though the denial is of course literally true. After all, praying is altogether medically inefficacious, within any time frame. Formally, there are two ways to handle this. We can either restrict through stipulation the universe of discourse over the range of which we apply the predicate of sustainability, that is, we may simply leave subject matters that do not meet certain normative expectations in the short term outside. But this is barbarous, and it unwittingly limits the usefulness of the definition for making sense of everyday usage of the concept that may violate such restrictions. A better approach would be to call certain statements of unsustainability, e.g., "praying as a means for curing cancer is unsustainable", vacuously true. People tend to continue in a course of action only when it has served some useful purpose initially. Therefore, realistically speaking, the problem of unsustainability has relatively little chance of arising in relation to vacuously unsustainable practices, etc.

This completes my semantic analysis of the concept of "sustainability", *as an empirical concept*. Its familiarity notwithstanding, the notion that sustainability is necessarily either prudentially or morally desirable is unjustified because unexamined. This is contingent on the subject matter and the analytical context. Moreover, if and when we consider the question of whether the sustainability of some specific entity ought to be a moral objective, then there are many normative questions we must address about the subject matter besides that about its long-term consequences in one respect or another. Whatever subject matter regarding which the question of its long-term sustainability arises as a moral question must also be subjected to scrutiny about its moral soundness in the short-term. Indeed, insofar as long-term concerns tend to be logical extensions of the same concerns within a shorter time horizon, the former presuppose the latter. We would never deem sustaining an inherently evil institution such as slavery. This prima facie suggests that the deployment of the concept of sustainability in a moral context commits one to a holistic, and internally coherent, critical appraisal of the subject matter.

3.3 "Sustainability" as a Moral Concept

Normative and moral uses of the notion of sustainability are common. The nature of the norm of sustainability, and the type of value it purports to encapsulate, depend on both the value of either of the two terms between which the relation of sustainability holds. We can roughly distinguish between two different ways in which "sustainable" and "sustainability" are used normatively (both evaluatively and prescriptively): non-moral and moral. Each use is bound by its own logic, and involves the user with different sets of commitments. In this section I try to determine what these commitments are.

First, the value of sustainability may be essentially non-moral, in the same way, say, the value of efficiency is (or at least should be). Given a particular long-term goal, purpose, end or interest, the means whereby they are achieved or promoted are more choice-worthy if sustainable than if not, *ceteris paribus*. The notion of "choice-worthiness" appealed to here is morally neutral, neither the end nor the means in question needs to satisfy any moral norm. Hobbes, for example, makes normative, but non-moral use of the concept of sustainability in his argument against cheating, both in the commonwealth and in the state of nature. Hobbes's fool famously claims that it is "not against reason, when it conduced to one's benefit" to "make or not make, keep or not keep [] covenants[.]"[40] The issue this raises for Hobbes is what reasons there are for or against violating the terms of a contract to which one is a party when both these conditions are satisfied: (1) one believes with some good reasons that doing so on a particular occasion is likely to produce benefit for oneself, and (2) security of performance on the part of the other parties is not an issue (either because they have already performed or because they are themselves effectively deterred "by terror of some punishment [by the coercive power] greater than the benefit they expect by the breach of their covenant". Hobbes's response to the fool is that it would be against reason, unwise and imprudent to do so, because it "tendeth to his own destruction."[41] However, a single act of injustice cannot have any tendency one way or another; it either benefits the cheater or not. We can speak of tendency only if we are speaking of a pattern of dishonesty, that is, when dishonesty is adopted as a general policy.[42] For Hobbes, the

[40] Thomas Hobbes, *Leviathan* (1651), edited by Edwin Curley (Indianapolis: Hackett, 1994), Pt. I, Ch. xv, [4].
[41] Hobbes, 1651, Pt. I, Ch. xv, [4].
[42] Stephen Darwall, *Philosophical Ethics* (Boulder, CO: Westview Press, 1998), 102-6.

policy of cheating is unadvisable because it is *unsustainable*. A habitual cheater might now and again succeed in fooling and gaining unfair advantage of others, yet the odds are that he will be eventually found out, and shunned or otherwise punished by others. It is irrational to adopt a policy that would sabotage the necessary conditions for one's security.

Many instances of the normative use of "sustainability" cannot be subsumed under the purely prudential sense. Persisting on an unsustainable path amounts, intuitively at least, to a *moral* failure when and where others besides the agent suffer. When societies engage in behaviors that threaten the environment's ability to provide for future generations, the behaviors constitute a moral failure. Not only do such behaviors hurt people, but they hurt specifically by depriving their victims of something they have a right, or some lesser claim, to. Here, not only does the normative concept of "sustainability" accrue moral significance, the species under which the significance falls is distributive justice. This, then, raises an important question: what does a *de facto* concern with distributive justice require of us so far as the *scope* of that concern is concerned? We might also phrase the question thus: If the notion of sustainability is used to express our concern with distributive justice between the generations or age groups, does that concern not commit us to the cause of contemporaneous distributive justice?

I believe it does. Any nominal principle of sustainability would lack credibility as a principle of (distributive) justice if it is inherently partial in its scope. Indeed, since concern with the short-term tends to claim priority and assume greater urgency than concern with the longer term, it is *prima facie* untenable to elevate the importance of the latter at the cost of rejecting the former. David Miller has thus articulated the "pull" of

this requirement for the orientational comprehensiveness of the norm of justice, in relation, in this case, to environmental goods:

> "It has frequently been argued that policies of resource depletion and environmental degradation destroy the fair balance of benefits and burdens between the present generation and its successors. There is something curious about this argument, however. We attempt to show that policies to protect the environment are just by appealing to the claims of members of future generations. But how can these future persons have claims of justice to environmental goods unless at least some of our contemporaries have such claims too? … [I]t seems that whatever gives members of future generations claims to environmental goods must also endow members of the present generation with such claims."[43]

While Miller's substantive point is well taken, there is really nothing curious about the argument he is referring to, unless, of course, they are deliberately taken out of context: after all, those who make it can hardly be accused of suggesting that the *only* morally objectionable aspect of current policies that lead to resource depletion and environmental degradation is that in doing so they destroy the fair balance of benefits and burdens between the present generation and its successors. Contrary to the impression of a future bias inherent to these arguments that Miller has here created, most of their proponents are all too keenly aware of the woeful moral deficiency of these same policies in terms of their distributive consequences for the current generation. To many of them, that is simply their baseline assumption about the world order, and their concerns for the

[43] David Miller, "Social Justice Environmental Goods," in *Fairness and Futurity: Essays on Environmental Sustainability and Social Justice*, edited by Andrew Dobson (Oxford: Oxford University Press, 1999), 153.

long-term consequences of these policies add to, rather than replacing or otherwise occluding, their standing concerns for the short-them. As such, they would be in complete agreement with Miller that

> "[w]e ought first to show that people in general (whichever generation they belong to) have claims of justice to environmental goods, and then having established the general principle we would move onto consider justice between generations in respect of such goods. But to do this we would need to integrate environmental values into the theory of social justice as it applies to contemporaries."[44]

As I will argue more fully in section 3.6, a significant theoretical repercussion of this recognition of the requirement for multi-dimensionality inherent to the concern with distributive justice is that it imposes constraints on the inherent ethical character of the things whose long-term continuation is morally either desirable or obligatory. Moreover, given the nature of time's arrow, and the possibility for irreversibility of many kinds of anthropogenic ecological transformations, each generation's efforts to achieve intragenerational environmental distributive justice must be bound by what intergenerational justice requires of the generational cohort as a whole, *and not the other way round*. In other words, in order of deliberation as concerning the fair distribution of environmental goods, we may well have to start with the question of how much space the current generation has, given its obligation towards the future, and *then* proceed to the question of how, within this space, it is to equitably meet the demands of the currently living. I will defer the full discussion of this issue to chapter 6.

[44] Miller, in Dobson (ed), 1999, 153.

3.4 "Environmental Sustainability"

The notion of "environmental sustainability", I argue in this section, is an essentially truncated phrase, short for "environmental sustainability of the human economy". On this interpretation, the concept is a notational variance of its better-known cousin, "sustainable development" as construed under its canonical definition as given in the *Brundtland Report*. Moreover, the concept has a moral sense in that it expresses the idea that it is what present generations owe future ones. Part of my efforts to vindicate these much maligned and misunderstood concepts will be directed towards showing that, as Aristotle counseled, no more precision ought to be expected of any inquiry than is appropriate to the subject matter at hand. We would do well to adjust our expectations for what these concepts should and can deliver. Otherwise, most interesting concepts would have to go the way "democracy" did for J. L. Austin, who called it an example of "a notoriously useless word".[45]

Something is *environmentally* sustainable to the extent it tends to preserve the environmental conditions necessary for it to continue to fulfill its intended functions and serve its intended purposes in the long term. The relevant "something" needs to be identified. It must be inherently purposive, and functionally dependent on the planetary environmental conditions. The human economy – regardless of how it is organized – readily meets these requirements. However, we can understand what "the human economy" encompasses differently, depending on what we take the purpose of the economy to be, and how it functionally depends on the environment. On one hand, we obviously depend on the "ultimate means", *a la* Herman Daly, that nature has to offer in the form of "low-entropy matter-energy" and its various supporting functions and

[45] J. L. Austin, *How to Do Things with Words* (Cambridge, Harvard University Press, 1962), 144.

services (e.g., waste recycling and climate control) to meet our demands for material goods and services, produced or naturally occurring.[46] On the other hand, humanity also depends on the environment for the satisfaction of our non-material and non-instrumental – aesthetic, therapeutic and spiritual – needs and wants. Whether we take "the economy" to denote only activities relating to the satisfaction of material needs and wants or any purposive activity, it is functionally dependent on the macro and micro conditions of the earth's ecosphere. On either conception, we should include what we might broadly call the "culture" associated with the relevant forms of activities and the prevailing institutions that frame them. As Rawls has put the point (one that has of course been observed for as long as human beings have been reflecting on the matter): "[T]he social system shapes the wants and aspirations that its citizens come to have. It determines in part the sort of persons they want to be as well as the sort of persons they are. Thus an economic system is not only an institutional device for satisfying existing wants and needs but a way of creating and fashioning wants in the future. How men work together now to satisfy their present desires affects the desires they will have later on, the kind of person they will be."[47] Therefore, the criteria by which we judge whether an economy is environmentally sustainable must contain some reference to those cultural values and mentality that bear on the population's material consumption behavior.

Clearly, the choice between the two conceptions of the economy has large consequences for what one takes an environmentally sustainable economy to be. The narrower conception makes no provision for maintaining the environment for the purpose of satisfying our interests in its intrinsic worth, its physical and functional integrity, while

[46] Herman E. Daly and Kenneth N. Townsend, "Introduction", in *Valuing the Earth: Economics, Ecology, Ethics*, edited by Herman E. Daly and Kenneth N. Townsend (Cambridge: MIT Press, 1993), 17-24.
[47] John Rawls, *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971), 259.

the broader conception does so explicitly. This in turn determines if non-use of the environment, with which the environmentally committed are concerned, is amenable to economic analyses in a way similar to how instrumental use of the environment is. What is at stake in the choice between the broader and the narrower conceptions of the economy is whether, and the extent to which, the tools and methodologies of economics can and should be brought to bear on the admittedly *moral* question of the environmental sustainability of the economy.

Economists have proposed various economic definitions of the cluster of concepts consisting of sustainability, environmental sustainability and sustainable development.[48] The most impressive and often cited attempt to catalogue and analyze them is by the economist John V. C. Pezzey, who nonetheless decided several years after his own monumental work that it may after all be an all but hopeless enterprise to get clear on the meaning of the concept.[49] According to the Nobel laureate Robert Solow, "[t]he duty imposed by sustainability is to bequeath to posterity not any particular thing…but rather to endow them with whatever it takes to achieve a standard of living at least as good as our own. We are not to consume humanity's capital, in the broadest sense." According to Andrew Dobson, Solow's is not a theory of *environmental* sustainability of the economy because it "is underpinned by a belief in the perfect substitutability of human-made for natural capital." Now Robert Solow may believe this, but the statement above contains no specification of the exact composition of the "bequest package"[50] of "humanity's capital".

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[48] Jeroen C. J. M. van den Bergh, "Ecological Economics: Themes, Approaches, and Differences with Environmental Economics," Tinbergen Institute Discussion Paper, 2000, 9.
[49] John V. C. Pezzey "Sustainability Constraints Versus 'Optimality' Versus Intertemporal Concern, and Axioms Versus Data", *Land Economics*, vol. 73, no.4, 1997, 448-66.
[50] Stanley R. Carpenter, "Sustainability", *Encyclopedia of Applied Ethics*, edited by Dan Callahan, Briarcliff Manor and Peter Singer, (Academic Press, 1997), 4: 275.

And it does contain the requirement that we conceive of capital is the "broadest" sense. A charitable interpretation of it would show that it is perfectly consistent with either weaker or stronger assumptions about substitutability (I will return to this issue in chapter 6.) Moreover, it is also consistent with different theories of what "standard of living" means and how it is determined (I will turn to this issue I chapter 4).

What is beyond dispute, I believe, is that to the extent that economic theories are concerned with the environment, such concern is essentially *derivative*, i.e., it is motivated and justified by its primary concern with human well-being, towards which the environment may contribute in various ways. Indeed, traditional economic treatment of resource conservation (in resource economics) and of environmental protection, including pollution abatement (in environmental economics) is essentially consequentialist *and* utilitarian in axiological orientation. So far as the environment is concerned, it can contribute towards or determine the quality of human life, both collectively and individually, in both materialistic and non-materialistic ways. Therefore, the openness of the notion of "whatever it takes" to achieve a certain living standard allows it to involve not just exploiting the usefulness of the environment for the purpose of satisfying our materialistic wants and needs but also honoring its non-use value of leaving the environment intact so as to satisfy our non-materialistic wants and needs in regard to it. I take up this question in the next chapter.

3.5 The Possibility of Intertemporal Justice

I suggested in section 3.3 that type of moral norm relevant or appropriate in appealing to the moral sense of "sustainability" is the norm of justice, specifically, justice between generations (or more generically, intertemporal justice). In the last section, I

argued that, specifically in the case of the environmental sustainability of the economy, its primary sense concerns the specific ways in which the present generation goes about satisfying its welfare needs, material or non-material, and progressively deprives subsequent generations of their ability to achieve the same aspirations, norms of justice that govern earlier generations' duty to posterity have been violated. Some will object that the concept of justice does not apply to the relation between generations, and so am I am begging a question that should be asked? First, the platitudinous reply is that every interesting theory of anything must beg some questions so it can ask and answer others. These are simply called "assumptions". But obviously this does not mean all theories are conceptually doomed to be fallacious; they would not be, as long as their assumptions are not also what they purport to establish as conclusion. So secondly, as concerns the present case, the intelligibility of intergenerational justice as a moral category is one of the assumptions of my analysis of "sustainability" as a moral concept. The conclusions I would like to try to establish have to do with what it would mean to deploy the concept of sustainability in formulating its principles.

It suffices, therefore, for me to note briefly several standard difficulties with the assumption of the intelligibility of intergenerational justice, and their possible rejoinders. One source of concern in connection with the question of intergenerational justice is the lack of reciprocity between people that live in different times; while later generations must bear the consequences of the actions of earlier ones, the reverse is not true. Approximate equality in power is necessary for reciprocity, and reciprocity is necessary for the possibility of justice. Hume's conventionalism about justice is one prominent historical source of this view. On Hume's theory, justice is constituted by rules regulating

rational co-operation for *mutual* advantage. But mutuality presupposes reciprocity. This particular equality requirement on the scope of justice has been widely criticized. Brian Barry, for example, has put it thus: "if someone can read a history of European settlement in Australia and the Americas, or a history of Negro slavery" – cases involving relationships of staggering inequality – "without admitting that he is reading about a history of monstrous injustice, I doubt if anything I say is likely to convince him."[51] But since this equality requirement clearly and necessarily fails for relations between generations, it is also particularly relevant to the issue of the possibility of intergenerational justice. Its rejection, therefore, removes one key conceptual hurdle to the intelligibility of intergenerational justice as a moral category.[52]

Another set of issues relating to intergenerational justice stem from the alleged difficulties of attributing rights to the unborn. Anyone who tries to do so faces two chief logical obstacles. The best articulation of one, the so-called "Non-Identity Problem", is largely credited to Derek Parfit, and developed by others.[53] The idea is that "the identities of people in the further future can be very easily affected… [I]t is *not true* that in the further future, the same people will exist whatever we choose [to do now] (original emphasis)."[54] This, conjoined with the "person-regarding" view about moral duty, that "duties must always be duties *to* someone or other"[55], generates the paradox that rights-honoring is necessarily self-defeating because it preempts the existence of those whose

[51] Brian Barry, "Circumstance of Justice and Future Generations" in *Obligations to Future Generations*, edited by R. I Sikora and Brian Barry. (Philadelphia, PA: Temple University Press, 1978), 222.
[52] Of course, the logical incompatibility between the doctrine and the possibility for intergenerational justice does not by itself tell us which position we ought to accept and which to reject. That, I admit, would depend largely on which way our intuitions lean.
[53] Thomas Schwartz, "Obligations to Posterity," in *Obligations to Future Generations*, (eds.) R. I Sikora and Brian Barry (Philadelphia, PA: Temple University Press, 1978), 4-5.
[54] Derek Parfit, *Persons and Reasons* (Oxford University Press, 1984), 363.
[55] Jan Narveson, "Future People and Us," in *Obligations to Future Generations*, edited by R. I Sikora and Brian Barry (Philadelphia, PA: Temple University Press, 1978), 43.

rights are nominally being honored (and that retroactive rights-claiming is vacuous because what is claimed is logically impossible). The other logical obstacle is based on the intuitively plausible idea that existence is a *logical* precondition for rights-possession.[56] Sentences containing non-referential names or descriptive phrases are either false or meaningless. The truth of the proposition "future people *do* have rights (now)" is logically independent of, that is, not entailed by, the truth-value of the position "future people *will* have rights (once they come into existence)".[57] Actualized rights actually carry moral weight, non-actualized rights, Beckerman would say, do not actually do so, and therefore cannot factor into the moral calculation of the presently living.[58]

I suspect this argument trades on a fundamental elision of the elementary logical distinction between essence and existence, or as Whitehead would put it, between fact and form, and thereby begs a key question about the ontological nature of the so-called "moral community". Philosophical debates about the demarcation of the moral community have traditionally, and rightly so in my view, focused on the question of the *essence* or *form* that defines the membership criterion. Sentience, rationality, or the capacity for apparently goal-directed behavior in response to environmental stimuli, all purport to describe the *type* of things that ought to be accorded one or another level of

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[56] Wilfred Beckerman and Joanna Pasek, *Justice, Posterity, and the Environment* , (Oxford,: Oxford University Press, 2001), 15-23.

[57] The furthest that Beckerman was willing to go is to allow that "future generations...may well have rights in the future." (Beckerman, 2001, 21.)

[58] The tacit assumption seems to be that if one's conduct is to be bound now, what does the binding must be contemporaneous with one's existence, on which, a fortiori, my ability to respond to its restraints logically depends. But it is not obvious that the contemporaneity requirement is legitimate. While the co-existential (i.e., temporal) dimension obviously holds for physical constraint, should it hold also for normative constraints? What ought to matter, it seems to me, is not the temporal location of the existence of the rights of the unborn, but rather the acknowledgment and/or anticipation of the rights-to-be. This is not a case of reverse causation, since the phenomenon of a moral agent responding to normative constraints is in its very nature not something that we should try to explain on the mechanical/causal model of explanation. Rather, this is to be explained teleologically. Therefore, there is no insurmountable logical hurdle of conceiving of honoring the future rights of future people as the "final cause" of our present actions.

moral consideration. It is types of entities that are its *primary* members, and individual tokens of these types are members *derivatively*, that is, in virtue of their being tokens of these types. If being a rights-holder is the mark of membership in the moral community, then *all* tokens, actual and possible, of the type that claims membership have rights, in the tense-neutral sense of "have".[59]

If the notion of "unborn human beings" is to have sense, it must mean something different from nothingness, and from unborn elephants, and from extraterrestrial beings. Unborn human beings are unborn *human beings*. They are not just potentially anything whatsoever. Instead, they are potential, i.e., unactualized tokens of a very specific type. Their essence precedes their existence, and so does their membership in the moral community, and so does, consequently, their status as holders of rights. Temporal distance that separates generations does not present a *logical* or *conceptual* obstacle to normative binding any more than spatial distance does. Indeed, the situation is symmetrical as between before and after death. Honoring the will of a dead person is not senseless just because the person no longer exists. It is certainly relevant that that which is dead is a human being, that is, token of a type which does not cease to exist when one of its tokens does. Honoring the will of a dead person makes moral sense not because the person is dead, but because what is dead was a person.

For each human being, what remains constant across its three existential modes – unborn, living and dead – is its essence as a human being. A living person has rights not

[59] It is in this sense that the deployment of the concept of community in this context may be a double-edged sword: while it may pack the emotional punch and thereby serving the theoretical purpose of those who seek to argue for greater inclusion, it may also be burdened with the temporal and spatial, that is, the existential prejudices inherent to its use in other types of context. After all, my neighborhood, my local community can no more include the dead than it can the unborn, potential immigrants. It includes, in terms of its membership, those who live here, right now.

because she is alive, but because of her personhood. And it does not matter what *other* accidental attributes they may have – their sex, race, religious affiliation, et cetera – since interpersonal variability in these respects has no implication for their status as rights-holders. Alternatively, as Beckerman and others have suggested, we can understand intergenerational equity in terms of the obligations – those that do not correlate with any rights – the presently living have towards future generations.[60] While Beckerman denies that such obligation is an obligation *of justice*, and insists that it is a humanitarian duty, others disagree.[61] Still, the category under which we subsume the moral imperative ought to be immaterial to its substantive content.

I suggested toward the end of section 3.3 that concern with justice on the intertemporal dimension is inconsistent at some deep intuitive level with indifference towards intragenerational justice in regard to the same subject matter. If we accept this intuition, then *insofar as* one is disposed to so characterize one's moral concern with sustainability in this way, that is, as a concern for justice, one is conceptually bound to look beyond the intertemporal dimension and also to the intragenerational dimension. This requirement need not be met by a definition of the concept of sustainability, though it does have to be satisfied by any substantive *principle* of sustainability. If the principle of sustainability is to serve as a principle of justice, it must be consistent with the principles of contemporary justice in the sense that what it grants members of future generations must be comparable with what the latter would grant members of the present and immediately subsequent generations. Sustainability is a necessary, but not by itself a

[60] See for example, Onora O'Neill, *Towards Justice and Virtue: A Constructive Account of Practical Reasoning*, (Cambridge University Press, 1996), ch. 5.
[61] Ronald M .Green, "Intergenerational Distributive Justice," in *Responsibilities to Future Generations: Environmental Ethics*, edited by Ernest Partridge, (Buffalo, NY: Prometheus Books, 1981), 91-102.

sufficient, condition of distributive justice. This has obvious implications for any moral discussions of the environmental sustainability of the economy. To ask of modes of material production and systems of income and cost distribution that engender inequity among contemporaries whether or not they are environmentally sustainable in the long-term only is to have lost sight of why we are concerned with long-term environmental sustainability of the economy in the first place.

Ch.4 Environmental Sustainability and Economics

4.1 The Issue

Entire fields in economics, such as resource economics, energy economics, environmental economics, and ecological economics address questions of resource conservation, pollution abatement and ecosystem preservation. Concern with the long-term, or sustainability, is endogenous to economics. Most contemporary economists are, however, concerned specifically with the prospect of continual economic *growth*, and not the provisioning of material sufficiency to the population. While I disagree with economists on this fundamental point, the relevance of economics to the question of environment sustainability is a separate question. I consider that question in this chapter.

All economists speak the language of utilitarianism, which is at its core welfare consequentialism. But economics is not one and the same as utilitarianism or welfare consequentialism. There is much more to economics, of whichever school, than its philosophical and metaphysical foundations. A foundation is just that, and its soundness need not be undermined by the poor design or execution of what is built on it. A number of assumptions are nearly universally accepted by economists, as well as by corporations, entrepreneurs, politicians, and ordinary individual. But they are neither intrinsic nor necessary to welfare consequentialism as a distinct way of practical reasoning and approach to decision-making. Some of these assumptions should arguably be held largely accountable for the systematic failure of economics adequately, and in a morally defensible way, to address key questions of environmental sustainability, including resource management, pollution abatement and ecological preservation. But often, the

criticism has been directed, and not always fairly, at the utilitarian underpinning of economics, especially by non-utilitarian philosophers.

For example, welfare consequentialism does not require discounting the future,[62] or entail the belief that technology can solve all our environmental problems, or the closely related belief in the full substitutability of natural capital by human-made capital, or the belief that government regulation of and policy intervention in the market are neither necessary nor desirable for achieving the common good, etc.[63] Furthermore, welfare consequentialism does not entail the desirability of indefinite increase in a population's material wealth. Notably, John Stuart Mill did not believe that.[64] Unlike most contemporary (neoclassical) economists, Mill, as the last giant of the classical tradition, did not believe (as most thoughtful people would not) that human beings have insatiable material wants and that welfare returns from material acquisition never diminishes.

These, and other, practices and beliefs and values have been subject to severe philosophical criticism and rightly so. In fact, as I will argue in chapters 5 and 6, specifically on the questions of the role technology can play in environmental sustainability of the economy, and of the extent of the substitutability between natural and human-made capital, the optimism of the sort touted by many practicing economists

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[62] Indeed, the allowability of this practice is by no means universally shared among economists. It is particularly viewed with suspicion if not outright disapproval among economists who study the economics of sustainability. Most famously, those include Frank Ramsey, Partha Dasgupta and Jeoffrey Heal.

[63] Intra-disciplinary division is as true of economics as it is of any other academic field. It would be inadvisable to over-generalize about what economists believe. Moreover, a cursory knowledge of the history of economics would reveal that basic assumptions and foundational beliefs – metaphysical, empirical and normative – shift over time, contingent on changes in the macroscopic societal conditions. Particular belief strongly associated with mainstream, neoclassical economics as it is currently practiced need not, therefore, be either logically or conceptually necessary to economics. Some historicist sensibility always helps to sharpen our focus of criticism.

[64] John Stuart Mill, *The Principles of Political Economy, with some of their applications to Social Philosophy* (Kitchener, Ont.: Batoche, 2001), Bk. IV, Ch. VI, § 2, 750-1.

is particularly unjustified and unjustifiable. However, that these assumptions may be brought to bear in explaining some of the behaviors societies engage in and which turn out to have negative environmental impact, need not entail that the welfare consequentialist foundation of economics must themselves be unjustified and unjustifiable. It is perfectly conceivable that a theory of economics, which is not saddled with these adjunct assumptions, could be used for promoting rather than obstructing resource conservation and environmental protection even if it is predicated upon instrumentalism about the value of the natural environment.

I brave the storm and attempt to offer a limited defense of economic thinking, or more accurately, consequentialist, welfare-oriented thinking, on a specific question: namely that of what it might mean to sustain the intrinsic value of the environment. Criticizing the way economics *as it has been in fact practiced* or as it *is* is different from criticizing the discipline *as it could be practiced* or *be*. The latter is determined by how closely the discipline could hew to the true spirit of its philosophical presuppositions, which in this case is welfare consequentialism. I argue that the validity of many philosophical criticisms of economics as it has been practiced by the so-called "mainstream", or neo-classical economists notwithstanding, welfare consequentialism remains a viable, plausible, and even powerful way of thinking about environmental issues. I will try to illustrate how this may be the case. In particular, I do so by looking closely at the arguments of two philosophers, Elizabeth Anderson and Mark Sagoff. I have chosen these two philosophers because they are noted for their critical stance with regard to economic thinking in general and economic thinking about environmental matters in particular. According to both Anderson and Sagoff, economics handles

questions pertaining to the instrumental value of the environment poorly and cannot handle questions pertaining to the non-instrumental value of the environment at all. The cost-benefit analysis (CBA), the stock-in trade of economics, is not just inadequate for designing public policy, but can be positively dangerous when used where participatory decision-making should be. Economics, on this view, has usurped the role that philosophy and other social sciences should play in supplying the relevant and necessary principles guiding collective reasoning.

I believe that second-order utilitarianism provides a useful framework for connecting the non-instrumental value of the natural environment with human welfare. Welfare, on the view I defend, is determined by the satisfaction of not just self-regarding, materialistic needs and wants, but also of other-regarding, non-materialist ones. Moreover, while I disagree with these authors, and agree instead with economists that it is futile to try to gauge the welfare consequences of the environment's intrinsic value, I do not agree with the way economists actually try to do it, that is, by using money as a universal measuring rod. I propose an alternative method of measurement, one which I hope to show, in chapter 5, supports the claim that most of the weight of the argument for limiting economic growth to achieve environmental sustainability must be born by the appeal to the instrumental value of the environment for human survival and development.

4.2 Welfare and Intrinsic Valuation

Consequentialism is not itself a substantive first-order moral theory. It identifies the morally relevant aspect of the object of moral judgments, such as attitudes, emotions, actions, institutions, and policies, but is otherwise neutral as between different

substantive views about *what* is good or right. Utilitarianism in general falls under the genus of consequentialism. For classical utilitarianism, the differentia are two: (1) happiness is the only thing intrinsically good, and (2) right actions are those that produce more aggregate amount of it than any alternative. This distinction between utilitarianism and consequentialism is analogous to the distinction Michael Sandel draws between normative and metaphysical deontology.[65] Rejection of utilitarianism, therefore, can be based on different grounds; one may do so because one rejects consequentialism altogether, or because one objects to a particular view about what is intrinsically good and about universal aggregation.[66] The considerable plasticity in the demarcation of morally significant or relevant consequences, on top of the uncertainties about the definition of consequence, make outright rejection of consequentialism more difficult than it might seem.[67]

I distinguished two kinds of intrinsic value in chapter 2, one attributable to what *has* interests of its own, and the other to the objects of the non-instrumental interests of interest-possessors. The environment, in my view, has intrinsic value in the second sense but not the first. An interest, *any* interest, whatever its content or object, is either satisfied or frustrated. Our question now is whether the difference between these two states – the satisfaction of an interest and the frustration of it – can be coherently cast in terms of a difference in the welfare of the person whose interest it is. Both Sagoff and Anderson would deny that it can. Sagoff illustrates the alleged mutual independence between intrinsic valuation and welfare using the example of Charlotte's valuing of Wilbur in

[65] Michael J. Sandel, *Liberalism and the Limits of Justice* (Cambridge; New York: Cambridge University Press, 1982), ch. 1.
[66] Amartya Sen, "The Discipline of Cost-Benefit Analysis," *The Journal of Legal Studies*, Special Issue of Cost-Benefit Analysis: Legal, Economic and Philosophical Perspectives, Vol. 29, No. 2, June 2000, 931-52.
[67] Sen, 2000, 936.

Charlotte's Web. Anderson does this with the example of environmental valuation. Let us consider their arguments.

According to Sagoff, in thinking "it morally better that Wilbur live out his life in peace than show up with an apple in his mouth at Christmas... [Charlotte's] idea of what is valuable went far beyond what she thought enhanced her well-being."[68] Now between what one values and one's own well-being there is an obvious sense, as Joseph Butler long ago pointed out, in which the first is logically prior. What one values is constitutive of one's *being*, one's identity, the definition of which must be antecedent to any substantive account of what being and doing *well* involves for the individual thus defined. Valuing Wilbur is part of Charlotte's identity, it cannot be derivative of or based on Charlotte's idea of her own well-being any more than Charlotte's diet can be. However, given her interest in Wilbur's well-being, how far it is satisfied must have systematic impact on Charlotte's well-being. Indeed Charlotte herself admitted as much.

When Wilbur asked her why she did what she did for him, Charlotte said: "You have been my friend…By helping you, perhaps I was trying to *lift up my life* a little (emphasis added)."[69] Sagoff takes "lifting one's life up" to mean "making it better", and *not* "making it better off". The difference, presumably, is that the first refers to the moral quality of a life while the latter to the amoral quality of life. But, in this case, we can grant Sagoff that helping Wilbur has enhanced the moral quality of Charlotts's life without also granting him the denial – which seems implausible and strained – that it also enhanced the amoral quality of Charlotte's life. If somebody tells me that something has "lifted up" their life, I would be hard pressed not to understand them as saying that their

[68] Mark Sagoff, *Price, Principle, and the Environment* (Cambridge, UK; New York: Cambridge University Press, 2004), 2.
[69] Sagoff, 2004, 1.

welfare has been enhanced. I also doubt that Charlotte would have herself agreed with Sagoff's interpretation of her meaning. Note that in the above quote from Charlotte does not say, or even suggest, that helping others indiscriminately would lift up her life, even though that would seem to be implied by the principle of impartiality that defines the core of morality (and certainly morality in the Kantian deontological tradition, in which Sagoff is writing). Rather, what she says is that it is *because* Wilbur is her friend that she deems it worthwhile to help him. In helping Wilbur, Charlotte is not just helping somebody, anybody, but somebody she already cares about, somebody whose well-being matters to her. Wilbur is the object of an identifiable interest that Charlotte antecedently has. In denying that Charlotte derives (amoral) joy from acting on this specific interest we are begging the question against a conception of welfare that is so narrow as to recognize nothing but a small and arbitrary subset of one's interests, concerns and values.

That Sagoff *needs* to make this distinction between better and better-off, between the moral and the amoral quality of life is obvious. It is the basis on which he can separate (amoral) welfare, which is a function of the satisfaction of preferences, and morality, which is a function of moral convictions and their role in practical reasoning. This distinction is in turn the basis on which Sagoff can then claim that to the extent that economics is really concerned with the first, what makes people and societies *better off*, it is either overreaching itself or guilty of fraud insofar as it tries to speak on the second question, the question of what makes us *better*. But even by Sagoff's own standards the distinction is unsustainable, as is illustrated by the comparative analysis of noble Charlotte and ignoble Templeton, the gluttonous rat.

It is clear that to Sagoff (as it must have been to E. B. White and many if not most readers) in the final (or perhaps any), analysis, Charlotte emerges as the one with the more satisfactory, more fulfilling and happier life, while Templeton the rat is miserable. Assuming this to be the case, two related sets of questions arise: (1) does Templeton have to be miserable and Charlotte happy and fulfilled? and (2) why would either Charlotte's fulfilled and happy life or Templeton's misery be of philosophical significance to anybody, but in particular to Sagoff? We can interpret the first question in basically two ways. If what is being asked is whether either Charlotte or Templeton is fated to be happy or miserable, the question is in a sense unanswerable. We could, of course, stipulate an answer, the same way we can add at will any details to the characters. But if what is being asked is whether a glutton is necessarily miserable, or a compassionate altruist necessarily fulfilled and happy, then much more serious issues are at stake, such as the relation between interest-satisfaction and welfare.

I believe that on Sagoff's analysis, Templeton's misery is not merely accidental, independently of his being gluttonous, but a necessary consequence of it. What the example of Templeton shows is that it can, and does, matter to one's (amoral) welfare whether one has any other-regarding and non-material interests. But this is clearly inconsistent with the thesis that Sagoff otherwise wishes to maintain, namely, that welfare is straightforwardly a matter of the satisfaction of material needs and wants, and that either the having of non-material interests and other-regarding interests or the satisfaction or frustration of these interests can have no welfare consequences. But clearly, between Charlotte and Templeton, the differences in the kind of interests each has

respectively cannot have no explanatory relevance to the happiness of the former and the misery of the latter.

As I will continue to argue later, the problem with economics as a practical science in general, but in particular as an approach to environmental management and a guide for policy debate does not reside in its *form*, as it were, as defined by its consequentialist, welfare-oriented meta-ethical foundation (or posture). Rather, we must understand economics *as it has in fact been practiced* (that is, not as it could be practiced) as a composite of both its *form* and the *material* with which it has tended to deal. Historically, as a theoretical sibling of industrial capitalism, the subject matter dealt with in economics has overwhelmingly been what industrial capitalism is best at, namely, the production of directly consumable *material things*. As such, economics as it has been practiced suffers from a *materialistic* bias: it is more suited for dealing with matters relating to the satisfaction of those interests and desires satisfiable through the direct consumption of material things. This bias is easily detectable, for example, in a characterization of economics as "the study of (a) how scarce inputs of human labor, accumulated capital stocks of different types, and environmental resources are allocated to different parts of society over time in order to produce outputs of goods and services that people want; and (b) how the outputs are distributed."[70] And, an important reason it is more suited for that purpose is the existence of money, a universal and homogeneous denominator, as the dominant medium of exchange in any industrial market economy. However, it is not *conceptually* necessary for the formal study of economics to be thus

[70] John C. V. Pezzey and Michael A. Toman, "Sustainability and Its Economic Interpretations," in *Scarcity and Growth Revisited: Natural Resources and the Environment in the New Millennium*, edited by David Simpson, Michael A. Toman and Robert U. Ayres (Washington, DC: Resources for the Future, 2005), 123.

biased, and it certainly would be both confused and unfair to direct complaints against the bias at utilitarianism.

To interpret "welfare" materialistically is to stack the deck against economics. "Economic welfare" and "material welfare" become synonymous. But why should they be? If we see that "economic" is synonymous with "material", and we have little philosophical difficulty with the concept of "material", then we must allow the concept of welfare to have the room in which to remain definitionally neutral as between the economic/material construal and a more comprehensive and subtle construal. The fact that economists regularly deploy the concept of welfare in their work does not mean they in some sense "have it". They certainly have no *claim* to what it can or cannot mean. But to use the concept "welfare" in a way that assumes that its materialistic orientation is a kind of "given" is unwittingly to concede to the economists in the battle of ideas before one has even begun to fight it.

Anderson adduces a similar argument concerning the relation between individual welfare and the value of the environment. "Many people," she writes, "dedicate themselves to preserving and protecting [them] for their own sakes, even at significant cost to their own welfare," these people care about the environmental goods in ways that are "independent of their concern for human welfare."[71] Now, as with Charlotte and Wilbur, it is not because of its perceived contribution to personal well-being, or indeed the well-being of other human beings, that these individuals value the environment. However, insofar as an individual cares about the environment for its own sake, it becomes, for that individual, a source of personal well-being. But in saying that working

[71] Elizabeth Anderson, *Value in Ethics and Economics* (Cambridge, MA: Harvard University Press, 1993), 206.

for a cause in which one firmly believes, to promote the well-being of something one values intrinsically, can *cost* one in terms of welfare, Anderson is clearly denying that any systematic connection obtains between personal well-being on one hand and one's value-laden actions on the other. To see how the denial cannot be sustained, let us consider what exactly the price is one must pay by working for a cause one is morally committed to.

According to Anderson, environmentalists who work towards saving remote ecosystems pay the price of doing something that is "boring [and] poorly compensated". First, this seems rather arbitrary. *Any* job may be boring and poorly compensated, but it is unlikely that there is a necessary connection between either of these two things with whether the job has to do with saving something of intrinsic value, or indeed, perhaps by extension, promoting some greater good. We certainly can have little if any reason to believe that the substantive content of the work of environmental conservation can somehow *cause* it to be boring and poorly compensated. Most types of work can potentially become more or less boring after some time, and any kind of work is bound to be more boring to those who are indifferent to or do not believe in it than to those who do believe in it. As for compensation, because it is, in the large scheme of things, such an unreliable indicator of social value, it seems both haphazard and somewhat frivolous to bring this up.

For the sake of argument, however, let us grant Anderson both points, that one who works in environmental conservation most probably, if not necessarily, does work that is boring and poorly compensated. In fact, we might strengthen the assumption by adding, and not entirely arbitrarily, that this kind of work can often also be isolating,

dangerous, strenuous, under-appreciated, misunderstood, and more often than not, ineffective insofar as it falls short of its intended objectives (because these are, say, undermined or otherwise thwarted by corporate interests), and therefore frustrating. But we must also ask what it is that these individuals believe they gain, and in fact gain, by doing what they do, other than, say (and let us assume, not unreasonably perhaps), a feeling of moral righteousness. Can doing meaningful and fulfilling work, work that promotes the well-being of something an individual values for its own sake, not claim any positive impact on an individual's well-being that is independent of its impact on the material welfare of the individual? (And, let us not assume that people who do this kind of work do it because they could not find more exciting and more lucratively paid jobs.) Anderson does not answer the question either way because she rejects the assumption on which it is based, namely, that there is a meaningful conception of welfare or well-being that goes above and beyond material welfare.

Still, Sagoff's and Anderson's arguments do make several valuable points. They show that the pursuit of non-instrumental and other-regarding interests can be independent of (and even conflict with) the pursuit of self-regarding interests, and so can the pursuit of material interests with that of immaterial interests; they refute (certainly some vulgar version of) hedonistic utilitarianism (Sagoff's reference to a gluttonous rat is telling), and they certainly illustrate the hedonistic paradox, where deliberately aiming at pleasure (which Templeton seems to do) can be counterproductive, and that happiness may come more easily as a side-effect to doing something else. They also show that we are not to treat the ordinary use of the concept as normative. Defining "welfare" is a prescriptive task, not a descriptive one. These conclusions are not surprising. But they

otherwise settle no philosophical question one way or another as to what welfare should mean or consist in.

4.3 Rational Valuation and Consequentialism

One possible reply that Sagoff and Anderson would give to arguments that purport to show that an individual's non-instrumental interest in the environment, or anything else, can have welfare consequences (as opposed to merely moral consequences) for her, would be that such arguments falsely assume the validity of consequentialism, in which welfare utilitarianism claims theoretical parentage, as a meta-ethical theory. Consequentialist theories of rational action, according to Anderson, "characterizes the end of rational action as the realization of valuable states of affairs,"[72] and they assume that there is "one, fixed, canonical description of [the valuable] states of affairs under which they are uniformly relevant for assessing all actions."[73] By misidentifying states of affairs as the only thing that is intrinsically valuable, Anderson argues, consequentialism seriously misrepresents the human experience. Two misrepresentations are particularly pronounced on her view. First, we value many things besides states of affairs for their own sake. We value people, things, relationships, and others besides. Secondly, specifically in regard to actions or conduct, their causal efficacy relative to some specific state of affairs is hardly the only *ground* on which we value them.[74]

As an alternative, Anderson offers the expressive theory of rational action. Its core ideas, for our purposes here, are two. First, "practical reason demands that one's actions adequately express one's rational attitudes toward the people and things one cares

[72] Anderson, 1993, 22.
[73] Anderson, 1993, 38.
[74] Anderson 1993, chs. 1, 2.

about." Second, adequately expressing our evaluative attitudes "requires a publicly intelligible vehicle to make its point." Fundamental to the "social aspect of the expressive theory", Anderson claims, is the fact "that individuals are not self-sufficient bearers of practical reason; they require a context of social norms to express their attitudes adequately and intelligibly in action, to express them in ways others can grasp."[75] For Anderson, therefore, the morally relevant aspect of actions, insofar as they relate to evaluative attitudes, is their *symbolic utility* (though I am uncertain Anderson would herself accept this characterization) or *meaning*, and not the states of affairs they bring about.

Crudely, a state of affairs is a particular way in which the world can be. In the canonical interpretation, which Anderson follows, a state of affairs is not a fact, but the obtainment or, in Anderson's term, the "realization" of a state of affairs.[76] We might say, for example, that one and the same state of affairs obtains in one possible world but not in another. A paramount property of states of affairs is its descriptive agent-neutrality. We can completely describe a state of affairs without assuming a particular agent's perspective. The sentences we use in the description would be truth-functional, analyzable using extensional logic. This does not mean we cannot highlight a particular aspect of a state of affairs, but this is consistent with the agent-neutrality of the state of affairs. Meaning, by contrast, is inherently agent-relative, it is intensional. Meanings are meanings *to* specific individuals. This does not mean meaning must be private. To the contrary, for Anderson, both the assignment and the interpretation of the meaning of action are possible only within a social context. Actions, therefore, are significant in these

[75] Anderson, 1993, 18.
[76] Ramon M. Lemos, "Bearers of Value," *Philosophy and Phenomenological Research*, 51, 4, (Dec. 1991), 873-89.

two distinct ways: they can bring about the obtainment of states of affairs, and they can express and communicate meanings. Their expressive adequacy as carrier of meaning is gauged against the requirements constitutive of a set of social norms, while their causal efficacy as instruments for bringing about states of affairs is determined by empirical laws.

In Anderson's view, consequentialism must either deny the distinction between meaning and causing, and maintain that carrying a meaning or significance is just one way among many of having a consequence (or that having a consequence is just one way of bearing a meaning), or deny (if they allow the distinction) that the meaningfulness of actions is a relevant criterion for their moral assessment. But both views, according to Anderson, do violence to commonsense. We routinely use actions to express and communicate our attitudes towards people and things. And we gauge the regard in which we are held by others by reading into, i.e., by determining, the meaning of their actions. So Anderson does not say consequences are irrelevant, only that their importance is secondary and derivative. When we act to bring about particular states of affairs involving, and for people and entities we (antecedently) care about, this is not because those states of affairs are valuable independently of the value of the people and entities they involve. Rather, we care about certain states of affairs because we care about the people and things they involve, and believe that one way of expressing our concern with and interests in people and entities is to bring about certain states of affairs. On this view, states of affairs are extrinsically valuable in two distinct senses. Not only is their value derivative of the value of the objects they involve, it is also contingent on the specific

expressive demands of the evaluative attitudes, which in turn depends on the identity and nature of the intensional object of the attitude.

Therefore, it is important to distinguish between two issues, one concerning the choice of comprehensive moral theory between consequentialism and expressivism, the other concerning the choice, in a specific case, for a committed expressivist, between expressing a value by means of intentionally bringing about a certain state of affairs through an action towards or involving what is valued, and expressing the same evaluative attitude by means of conformity with some formal requirements and thereby achieving a certain measure of symbolic quotient. I argue that the relative importance of symbolic significance and material, causal significance as two different ways of "reading" actions as expression of evaluative attitudes depends on the nature of their objects. Symbolic significance is pertinent and important when the objects of our evaluative attitudes are entities with moral agency. By contrast, when the objects of our evaluative attitudes lack moral agency and as such cannot read our intentions, causal efficacy constitutes the relevant criterion by which the moral soundness of actions towards them must be assessed.

An attitude such as respect, according to Anderson, is directed at identifiable persons or things, not at propositions that contain the name or definite description of these persons. Respect, in other words, is not a propositional attitude.[77] The same is true of other attitudes such as love, anger, resentment, jealousy, and so forth. This is not to say these attitudes are noncognitive. How *could* they be? They can be justified, or not, depending, among other things, on their being based on true beliefs about their intensional object. What, then, does respecting somebody mean or involve, exactly? For

[77] Anderson, 1993, 20.

Anderson, answering this question involves spelling out the actions to which having the attitudes ought to dispose one, according to some social norms. For example, respect may be associated with making eye contact, refraining from interrupting, yielding, obeying and any number of other publicly observable behaviors. The attitude of respect, on this view, respect is no more or less than the disposition to act in these specific ways toward some individual. But such behavioral criterion, which is easy enough to apply, determining if an individual has fulfilled this particular moral requirement with respect to another human being, is a relatively straightforward matter.

One obvious shortcoming of this view is that it does not tell us how to distinguish between fake and genuine respect, a shortcoming it shares with behaviorism in general. The fact that respect is in some sense unique among interpersonal (and perhaps intra-personal) attitudes, that unlike love, admiration, gratitude and some other positive attitudes, it is a moral imperative, only compounds the problem.[78] But since feelings and thoughts cannot be commanded, only actions can, compliance with this moral imperative may be easily accomplished by learning to act convincingly, *in these specific ways*.[79] Another shortcoming – at least so I will argue – of this view is that in placing premium on behaviors notable for their instant visibility and symbolic significance, it might also serve to marginalize other concerns besides decorum that may be associated with the attitude of respect, including concerns with states of affairs involving its intensional object, that is, what actually happens to them. Part of the difficulty, in relation to this second shortcoming of the behavioral conception of respect, lies in uncertainty about

[78] Stephen L. Darwall, "Two Kinds of Respect," *Ethics*, Vol. 88, No. 1, Oct., 1977, 36-49.
[79] It would be possible also to understand Anderson's expressivism in terms of the symbolic utility of actions. See, for example, Robert Nozick's discussion on this topic in his *The Nature of Rationality*, (Princeton University Press, 1993, pp. 26-35).

what states of affairs involving its intensional objects they might be the realization of, which must be desired by the one who harbors that attitude.[80] And it is in this respect that respect differs from other attitudes and feelings such as love and benevolence, which, for this reason, better illustrate the connection between

In the case of, say, love and benevolence, trying to achieve certain states of affairs involving their intensional object can be a legitimate vehicle for expressing these attitudes. Anderson does not deny this, although she does insist that the appropriateness of aiming at such achievement "be subject to the constraint that they adequately express their correlative attitudes toward people."[81] Compliance with this constraint requires that the agent's (*de dicto*) concern with states of affairs be dependent upon her (*de re*) concern with people and things, *and not the reverse*. But inclusion of this constraint does not argue against consequentialism as such. It argues against dispassionate, but more importantly, confused and misguided consequentialism. Rather than debunking consequentialism altogether, Anderson has in effect enriched and improved it by articulating the proper context in, and background against which, states of affairs derive their moral significance.

Now in the interpersonal context, Anderson is quite correct that "we cannot make practical sense of ourselves without grasping ourselves as beings who take up attitudes such as love, hate, respect, and contempt toward other people." As a corollary, we are also creatures who care deeply about how our fellows feel or think of us. We are, in other words, by nature both givers and recipients of interpersonal attitudes. While this may be a

[80] Here I am discounting answers such as "the state of affairs in which one is being looked into the eye while being talked to", or "the state of affairs in which one is not interrupted while talking", or "the statement of affairs in which one is obeyed", on the ground that they are circular.
[81] Anderson 1993, 29.

truism, the significant theoretical implication of it may be this, that the ultimate reason why my attitude towards others matters *to me* is that it matters *to them*. If it is in principle impossible, for whatever reason, for my attitudes to matter to their intensional objects, then it is that much less easy to see on what ground it can be maintained that they themselves (as distinct from overt actions that might be associated with them) must nonetheless matter to me. And to the extent they still do – which of course they may – this fact can only be accounted for by reference to something other than sympathetic identification with another, say, adherence to a certain self-image to which the having of the attitudes in question is essential.

Unlike individual human beings, and perhaps even some animals, the natural environment is not an entity to which the regard in which it is held by human being matters. It will not feel disappointed, offended or insulted, although it can be "disrespected", "offended" or "betrayed". Therefore, insofar as we value it intrinsically (in addition, that is, valuing it instrumentally) concern for the causal efficacy of our conduct towards or involving it must by far dominate concern for their symbolic significance. That is to say, *adequate* expression of such evaluative attitudes must (1) be based on the desire to help materialize some relatively narrow range of states of affairs involving the natural environment, and (2) in fact do so. Acts that boast perceptual salience and symbolic significance primarily, and material relevance secondarily, if at all, may still be allowed to be considered expressions of the same evaluative attitudes. However, it must be conceded that they are *inadequate* expressions.

In conclusion, it makes little sense for us to care about how we *regard* the natural environment because the natural environmental does not and cannot care about how we

regard it. What makes far more sense is for human beings to care about the state or condition of the natural environment, an interest that does not presuppose the same interest on the part of the natural environment.[82] In other words, our caring for the condition of the natural environment need not depend on the natural environment caring about its own condition. What, then, is the range thereof we should care to materialize or maintain so far as the natural environment is concerned? To be eliminated immediately is existence as such. While this is also Anderson's position, I do not share her reasoning. She uses a painting as an example in her argument. "It doesn't make sense," writes Anderson, "to care about the existence of a painting unless it makes sense to care about the painting itself, perhaps because it is beautiful. And beauty is a valuable attribute of the painting, not of the fact that the painting exists."[83] For Anderson, the existence of something is a state of affairs. If it has value, its value must be derivative of the thing the state of affairs involves, namely the thing whose existence it is. But if it is also true, as Anderson concedes it is, that the reason we care about something, say, a painting, is that it possesses certain qualities, say, beauty, then two problems arise. First, it is not obvious that consistency would not require of us to say that it is the Form of beauty that is intrinsically valuable, and that, *pace* Anderson, the painting is only extrinsically valuable insofar as it happens to be a corporeal carrier of this quality. Second, it is not clear it

[82] In fact, we commonly take this kind of interest in other people, such as when we help others achieve conditions that we believe to be in their best interest even though they may not themselves take an interest in the same. For example, when parents urge their children to do what will benefit them in the long-term, and/or in the larger sense, they are often doing so against the will of their children which may be dictated by short-term desires and impulses.
[83] Anderson, 1993, 26.

makes sense to speak of the beauty of a painting, let alone *the* painting, unless its existence is presupposed to be constitutive of and inalienable from the painting itself.[84]

It is of course *prima facie* sensible to say that beauty is a valuable attribute of a painting and not a valuable attribute of the fact that the (beautiful) painting exists. But the significance of this claim is predicated on the confusion inherent to the first conjunct ("beauty is a valuable attribute of a painting") and the trivial truth of the second ("beauty is not a valuable attribute of the fact that a painting exists"). The second conjunct is trivially true for obvious reasons: we do not attribute properties to existence as such, only to things. The first conjunct is confusing and misleading because it creates the impression that when we use the phrase "the painting" to mention a particular painting, we are speaking of something that is distinct and separable from its existence. But beauty can only be truly (as distinct from "meaningfully", see below) predicated of paintings that in fact exist. If a painting does not exist, we speak falsely (though not meaninglessly) when we say that it is beautiful, not because it is in fact ugly, but because the precondition for true predication is not met, namely, the existence of the subject. "The round square copula on Berkeley College is both round and square" is not true, let alone analytically, not because the round square copula on Berkeley College is really triangular, but because there is no such thing as the round square copula on Berkeley College. We owe this view to Russell and logicians after him, who overcame the problem of non-referring names (such as "Pegasus") or definite descriptions (such as "the round square copula on

[84] Meaningful predication, that is, predication that is capable of truth value, is not possible without the presupposition that the entity to which properties are attributed through the linguistic act of predication exists. Many logicians have followed Bertrand Russell in formalizing this requirement by way of the pronouns. To predicate the property of being beautiful to a particular painting, we say that there exists at least one thing such that it is both a painting and beauty and this painting (we can name it, for example, and use its name in referring to it) is identical to one of them. See Russell's "On Denoting," *Mind*, 14, 479-493.

Berkeley College") by means of the pronoun, such as "something", "nothing" and "everything". "The round square cupola on Berkeley College is both round and square" would then be rendered as "there is as least one thing such that it is round and square and is a cupola on Berkeley College, and nothing else is both round and square."[85] The latter statement is neither true, nor meaningless; it is false.

So insofar as Anderson wishes to deny the logical primacy of state of affairs when it comes to valuing something for its own sake, she is right to deny that existence is what is at issue. It is, rather, a pseudo-issue in this connection. Instead, what should matter is whether the natural environment possesses some genuine properties which we deem valuable. When we value a beautiful painting, it is not its existence that we value, but its being beautiful, which requires its existence but is not identical to it. Similarly, when we love somebody, it is not their "mere existence", at least not insofar as that means being alive, that we are interested in. What we are interested in is their *quality* of life. Genuine love and respect for specific persons are, therefore, inconsistent with insistence on prolonging their biological existence – especially when this is against their will – and should instead mean the willingness to let them go should their quality of life be severely and irreparably compromised. The same is true when the things we value for their own sake are non-human entities, including individual animals, a house plant, and the natural environmental as a whole. Love for a pet, or care for a house plant, for example, is adequately expressed by concrete actions that are causally efficacious in helping to bring about their well-being, at least as we understand it. Indeed, we may even go so far as to

[85] W. V. Quine, "On What There is," in *From a Logical Point of View*, 2nd edition (Harvard University. Press, 1963).

define love and care of this kind in terms of the disposition towards welfare-promoting actions.

The same is true of artistic appreciation, which might be defined (at least partly) in terms of the disposition to act towards, say, preserving the physical integrity of the art piece. In the absence of such disposition, verbal declaration has little significance. And the same, of course, must be true of our interest in the well-being of the environment for its own sake. Adequate expression of this interest must consist in our disposition for actions whose express purpose is to help realize certain states of affairs involving the environment (or, what is the same, to help prevent certain states of affairs from being realized). This is, I believe, quite consistent with Anderson's expressive theory of rational action (it is really an *application* of it). As ought to be clear by now, the notion of "expressive adequacy" refers to a kind of *meta*-norm for judging actions. Another example of such a meta-norm is "universalizability" in Kant's ethical theory. What the Categorical Imperative test does is to offer a way of determining whether particular action-*types* as defined by a *universalized maxim* ("lie when it is in my immediate interest to do so") are permissible. What it does not do, however, is to determine which action-*tokens* fall under which action-*types*. This is, in a nutshell, the so-called "description problem" often thought to saddle Kant's Categorical Imperative. It is the problem of selecting among alternative descriptions of one and the same action for the universalizability test. Unless we have a way of solving this problem, the descriptive variability of all acts would indeed make the Categorical Imperative empty: a charge frequently leveled at Kant.

According to Barbara Herman: "because the C[ategorial] I[mperative] procedure assesses maxim of actions and because maxim contains only those descriptive elements that belong to an agent's conception of his action and circumstance, the CI cannot be an effective practical principle of judgment unless agents have some moral understanding of their actions before they use the CI procedure."[86] That moral understanding, according to Herman, consists in the agent's knowledge of what Herman calls "rules of moral salience." These rules "structure an agent's perception of his situation so that what he perceives is a world with moral features. They enable him to pick out those elements of his circumstances or of his proposed actions that required moral attention."[87] A person who is unable to discern these two features would have a deficient perceptual apparatus. However, "to know that something is a morally salient feature of a situation is not to know what one ought to do[,]"[88]; it is only to know which facts or factors of a situation "must be included when moral judgment is made"[89] about what one ought to do. Indeed, deciding how to conceptualize particular actions accounts for a considerable proportion of what we do everyday under the name of moral deliberation.

Analogously, the norm of expressive adequacy cannot guide actions unless we have some way of determining what, given the object in question, adequacy means so far as behavioral expression of our evaluative attitudes towards it is concerned. And that determination must presuppose some understanding of the nature of the object in question, including an understanding of which of its properties are salient from a moral point of view. Concerning actions meant to express our concern for the natural environment –

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[86] Barbara Herman, "The Practice of Moral Judgment," in *The Practice of Moral Judgment* (Cambridge, MA: Harvard University Press, 1993), 77.
[87] Herman, 1993, 77-8.
[88] Herman, 1993, 79.
[89] Herman, 1993, 79.

since the object of this concern is unable to read meanings into our actions but is materially vulnerable to our concrete actions – the criteria for adequacy must refer to their causal efficacy in relation to some specifiable range of states of conditions, and not to their symbolic significance. In conclusion, Anderson's expressive theory of rational action, and theories like it, can still "begin not with the external aims or states of affairs a person is to bring about, but with her internal attitudes toward the ends for the sake of which she acts,"[90] but they must somehow *end up* in a concern for the consequences of our actions in terms of objectively-describable states of affairs.

4.4 The Intrinsic Value of the Environment, Consequentialism and Economics

It is time to see how economic thinking, insofar as it is essentially consequentialist and welfare-oriented, might be usefully employed in relation to the question of how to honor the intrinsic value of the environment. Economics is concerned with states of affairs. Specifically, it is about the states of affairs that would result when we *economize*. In fact, it is not uncommon for economists to use the verb as the *definiens* to define "economics", the *definiendum*.[91] The definitional question is then pushed one step back: what does it mean to "economize"? To economize, according to the economist Lionel Robbins, is to "seek[] the efficient allocation of finite resources among alternate uses". Let us examine this definition more closely.

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[90] Anderson, 1993, 74.

[91] For example, Lionel Robbins does this in his classic "The Nature and Significance of Economic Science," in *The Philosophy of Economics: An Anthology*, 2nd edition, edited by Daniel M. Hausman (Cambridge: Cambridge University Press, 1994), 83-110. Frank Knight does this in his classic essay "Ethics and the Economic Interpretation", *The Quarterly Journal of Economics*, Vol. 36, No. 3, 1922, 454-81.

One obvious – to me anyway – advantages of it, is that it highlights the fact that economics is first and foremost a *methodology*, a *way of thinking*. Like all tools, which have some influence on but do not necessarily rigidly determine the tasks to which they are applied, to what subjects we apply economic thinking is not something that is settled by any definition of what economic thinking involves. Any rule presupposes prior, and separate, rules governing the scope of its applicability.[92] Robbins's definition, therefore, is neutral on a number of fronts. First, it is *topic-neutral* in the way just described. It does not stipulate the scope of the application of this style of reasoning. Whether a particular situation is amenable to *economic analysis* depends on whether there exists a plurality of ends – whatever these may be – the realization of which must draw upon means – whatever these may be – that happen to be finite. In Robbins' own view, "[s]carcity of means to satisfy ends of varying importance is an almost a ubiquitous condition of human behaviour."[93] This implies that economic thinking may have relevance to a wide range of topics, and not just those that are paradigmatically associated with the word "economics" in the minds of most people. My concern here is to show that not only is Robbins right in this assertion, but that, in particular, human behavior towards the natural environment is one area in which the problem of "the scarcity of means to satisfy ends of varying importance" is particularly acute.

To show this, however, we first need a preliminary account of the built-in plasticity of the definition of "economizing" just quoted and others in the same vein. The definition is also neutral between different ways of understanding or applying the

[92] As I discussed at length in chapter 2, we can determine what is arbitrary from a moral point of view only if we already know what defines the moral point of view. The distinction between these two determinations is analogous to the distinction I speak of here between the application of a rule and the application of a rule that determines the applicability of a rule.
[93] Robbins, 1994, 85.

concepts of “finitude”, “scarcity”, “resource”, “use”, “choice”, “(opportunity) cost”, and “trade-off” and even “means”, and “end”. All these concepts carry large baggage of their own, and are really both ambiguous and vague from a philosophical point of view. Take the concepts of “resource”, “means” and “use”. Now it is commonplace to treat “resource” and “means” (and “instrument”) as roughly synonymous, and to define them by means of the concept of use. For example, we might say that a resource is something to be used as a means. But this is not of much help since it is not really clear what it means to use something as a means, our pre-reflective belief to the contrary notwithstanding. In some cases (say, the so-called paradigm cases), this question presents little difficulty. There is no great metaphysical mystery about what we are talking about when we refer to a computer as a tool, or as a resource, an instrument, or a means which we use to stay in touch with the world. In other cases, however, the matter is not so clear.

For example, Nozick has asked whether “in getting pleasure from seeing an attractive person go by… one use[s] the other solely as a means”[94] This is certainly a meaningful question, and by no means an easy one to answer. Reasonable people, as they say, may well disagree. Women, or indeed anyone, who feels ambivalent about how to think of themselves, especially in relation to their secret (or not-so-secret) admirers, are certainly not crazy. What partly accounts for such ambivalence is the ambiguity of the concept of use, and means. Is the wife who counts on her husband to bring home the paycheck using him as a financier of her livelihood? Is the husband who counts on his wife to raise his children using her as a live-in nanny? To these questions, it is immaterial whether the husband and the wife may be deeply in love with each other and take on their respective roles willingly. Certainly, the fact that the word “use” tends to carry a negative

[94] Robert Nozick, *Anarchy, State and Utopia* (New York: Basic Books, 1974), 32.

connotation (one whose origin I do not presume to know) has contributed towards a (socialized?) reluctance to deploy it in describing interpersonal relationship (especially among moral equals). But this reluctance, even if understandable, may be misplaced, and the urge to eschew it in theoretical discussions may even impede understanding. Similarly, consider the case of artistic appreciation. While it is cliché to say that art is intrinsically valuable, it is far from clear that this means that the concept of use must be completely inappropriate for characterizing our relationship to the things we create to beautify our environment, to express our emotions, and to lift the human spirits. More generally, these two cases raise tricky questions such as whether enjoying something is the same thing as using it? Put another way, does the locution "using something for one's enjoyment" mean the same thing as the locution "enjoying something"?

The same ambiguity inflicts the concept of "resource". A simple example suffices to show this, having to do with the status of human beings. On the one hand, we believe that human beings have a dignity and are not to be used as mere means. Yet on the other hand, we routinely speak of "human resources", without a hint of irony.[95] There may be nothing incoherent about making both these claims, for it might plausibly be argued that while human *labor* (and perhaps talent also) is a resource, human beings, and/or human life as such, are not. But if we are to argue along these lines, then what we need is a much more nuanced definition of the notion of resource than currently exists. Such a definition must allow us to answer, or think systematically about questions such as how it is that something that is an end in itself (a human being), a *source* of value, can also *contain*

[95] For example, in the space of one single page of his *Sharing the Wealth: Workers and the World Economy* (New York: W. W. Norton & Company, 1999), Ethan B. Kapstein says that "we do not like to think of *ourselves* as goods at all", and that "[t]he more that countries make productive use of their human resources, the more likely they are to witness improved economic performance."

within itself something that is properly considered a means, a resource (labor power, body organs), or indeed whether being a *source* of value might not make something a *resource*. In the absence of such a definition, the least we can say is that the question of whether human beings are resources is ambiguous, and can be defensibly answered either negatively or affirmatively depending on what we mean by the operative concept.

What is true of the concepts "means", "use" and "resource" is also, I think, true of "finitude" and "scarcity". As I will show below, while these last two concepts primarily have applications in qualitative contexts involving subject matters that have antecedently been determined to be "resources" to be "used;" such applications themselves depend on crucial assumptions about how the more basic concepts of unity, division, subtraction and aggregation organize our perception of the world and our experiences in general, and of the natural environmental and our relation to it in particular. Spelling out these assumptions may help to show that these concepts can have wider applications than have customarily been believed.

My strategy for (partly) vindicating economic thinking on questions relating to human conduct towards the environment, essentially involves freeing the concepts just discussed of the materialist bias inherent to their common usage. These biases are in part due to the historical fact that neoclassical economics developed "around a particular social system", namely, capitalism, whose main virtue lies in "its ability to generate quantities of marketable goods and services,"[96] which are nothing if not instruments of one kind or another for meeting our *material* needs and wants. Avoiding these biases would mean that, when subsuming the natural environment under the concept of

[96] Herbert Gintis, "A Radical Analysis of Welfare Economics and Individual Development," *Quarterly Journal of Economics*, vol. 86, no. 4, 1972, 577.

"resource", say, we do *not* think of it exclusively in terms of the totality of stuff extractable and expendable as input in material – industrial or otherwise – production and the ecological services nor in terms of functions that support such production and related consumption. It would also mean broadening the concept of scarcity such that it can be deployed in speaking, not just of quantitative exhaustibility, but also of qualitative and/or functional degradability.

To keep the analysis focused, I want to use Elizabeth Anderson's conception (or caricature, as I tend to think of it) of economic thinking as an example of these materialistic biases. According to Anderson, economic thinking requires that we be "always prepared" to weigh the value of some higher-order goods, goods that we value intrinsically, against the opportunity cost of not using them for instrumental purposes. Thinking economically about our relationship to our pets, for example, would mean that we can always be convinced to consider the relative value to us of alternative treatments our pets may be subjected. But in fact, according to Anderson, feelings such as love require defiance or resistance to economic thinking; they require that considerations about, say, the opportunity cost of not eating them or selling them for laboratory experiments be "silenced, that they have no weight in our deliberations."[97] . I argue that, to the contrary, not only does the feeling of love not rule out economic thinking as it is more broadly conceived of under my analysis, it *requires* it, at least insofar as we have so much as a modicum of desire for love and acts motivated by it to be rational.

Let us begin by considering the idea of "silencing". To silence a voice is presumably to suppress it. Suppression may occur under one of two conditions: (1) the suppresser's knowing what the suppressed voice says, and (2) the suppresser's not

[97] Anderson, 1993, 208.

knowing what the suppressed voice says. When the suppresser knows what the suppressed voice says, the silencing of that voice is a result of, as opposed to being independent of, weighing its merits relative to those of other voices. But when the suppresser suppresses a voice without any knowledge of what it says, the suppression is presumptuous and unjustified. It is hard to believe how this kind of suppression can ever be anything else.[98] As Lionel Robbins puts it: "It is not rational to will a certain end if one is not conscious of what sacrifice the achievement of that end involves."[99] Even when we love somebody or something, it is mad to be completely ignorant of what, under particular circumstances, the cost of this love may be (which, to belabor the point, is very different from ignoring the cost, which presupposes that one is cognizant of what the cost is).

When a hunter and his hunting dog are both on the verge of starvation after getting lost and wandering in the woods for days, the silencing of the consideration about the opportunity cost of eating one's beloved dog in order to save one's own life is a luxury one can ill afford under these circumstances. The hunter may decide to die with his dog, but this decision should be arrived at because of, and not independently of, careful consideration of the different alternative courses of action. Again, if one's sick child can only be saved by an expensive medical procedure that one can only pay for by

[98] Of course, given the inherent looseness of natural language and the most casual way in which it is used in casual discourse, I leave open the possibility that when people verbally declare that they are simply not going to consider something that is not in fact what they mean. The idea is worth pondering that the performative and symbolic significance of such utterance may be greater than its literal meaning. More often than not, our saying things like this effectively conveys to our audience our indignation towards certain assumptions underlying whatever remarks that may have prompted our utterance in the first place. But this does not mean that either before or after the exchange – when that is what it is – some thinking may not have taken place on the very issue declared to be deliberatively off-limit. I should hate to think of thinking about costs as analogous to looking at pornographic material; sometimes it is best not to do it at all. Thinking about costs is not inherently morally repugnant, what matters is that we think about costs the right way, and arrive at the right conclusion.

[99] Robbins, 1994, 104.

selling one's beloved pet to a laboratory, there is little laudable in knowingly and deliberately silencing consideration of this option. No matter how great the intrinsic value of a painting may be, if the only way to save a human being from freezing to death is to set the painting on fire – that is, to use is as a mere means, and instrument, to an end – silencing the voice that raises this possibility is condemnable. Anderson may have unintentionally and unwittingly confused rational and rationally explicable love with blind and irrational love. Love may be a great thing, but *blind* and *irrational* love is not,[100] and it certainly ought not to serve as a model of sound *thinking*.[101]

Most of the time, fortunately, people do not face such stark choices. They have the luxury of not having to go through any overt or elaborate utility calculation for most of their daily decisions. Anderson's mistake, I think, is to mistake this contingent fact for a necessary truth about love and other such evaluative attitudes. Being subconsciously aware is being aware nonetheless, and it ought not to be conflated with either outright ignorance or rejection of knowledge. While subconscious awareness may have the appearance of silencing such considerations, that appearance could be deceptive. It may only be an appearance and not the fact of the matter, which is that the weighing of relative utility has been done under the psychological radar, as it were, and that it has yielded such extremely lopsided outcomes as to be unworthy of being publicized. The attitudes of contempt, revulsion, and disdain that, according to Anderson, it is appropriate for us to feel about gaining from using (for instrumental purposes) something in which we *also* have a non-instrumental interest are, therefore, not certain signs of moral

[100] Unless philosophers are ready to use the basic tools of their trade to deal with such topics, they had better just leave it to literature instead, as the anti-theorists about morality would have us do. I am not in favor of such a course of action.

[101] It is not even clear that the kind of love that Anderson has in mind involves any thinking at all. If not, then it is even more of a dubious example in the present context, which is after all about *rational* valuation.

rectitude or purity of the heart. Rather, they are at best sentimental *luxuries* affordable only to those fortunate enough not to have to make difficult choices, or, worse, a gestural vehicle for passing judgment to others.

In desperate situations, the willingness to and competence in making these choices – in weighing the different outcomes of different treatment of some person or object – are both necessary and important. This can only be done by reference to some criterion *other than* that used to attribute intrinsic value. Life can be messy just where theories are the neatest. A person who does not know that it is a morally better thing to save one's child by sacrificing one's pet, rather than the reverse, exhibits not moral probity, but either lunacy or incompetence or both. Contempt, revulsion and disdain, based on ignorance, willful or otherwise, are presumptuous and arrogant.

Now, let us see what weaning concepts essential to economic thinking of their materialistic bias might yield in the pet case. Unlike, say, "cat" or "goldfish", "pet" is not a natural kind term. Nothing is *intrinsically* a pet; in order for an animal to be a pet to somebody, it must stand to that individual in some particular ways, which in turn depends on the individual's "evaluative attitudes" towards the animal. Now, if and when somebody considers a particular animal a pet to her, she has determined that it is something intrinsically valuable, something in whose well-being she takes a non-instrumental interest, someone which is a source of utility from her point of view, albeit one which generates utility specifically by, say, providing companionship. However, *until* the title of pethood is conferred, or some specific alternative use settled on, the animal is an undifferentiated bundle of utility-yielding and welfare-promoting potentials. A large part of deciding whether something is to be conferred the title of a pet, or treated some

other way, is just deciding which one of these potentials to actualize by weighing, consciously or not, the relative expected value to the individual of pursuing these different options. And to understand this as a choice situation at all is just to understand the fact that there is a necessary trade-off between these different courses of actions.

In most cases involving the relationship between individual persons and individual animals, the kind of trade-off between non-instrumental treatment and instrumental treatment of the latter by the former is absolute. In most cases, one and the same animal is not able to play multiple roles in relation to the same individual: it is either a companion, or food, or a circus animal, or a draft animal, or an animal used in competitive sports, but not some of each at the same time.[102] However, when it comes to human relationships with the natural environment, the situation is somewhat different. While there are also trade-offs between our treating nature as something intrinsically valuable and our using it as a source of input for material production and receptacle for our waste, the trade-offs allow gradation. That is to say, human conduct towards and its relation to the environment lies on a continuum, with one end being heedless exploitation that leaves no corner or nature unsoiled by the human touch, while the other is prohibition against any physical disturbance, material extraction from or waste disposal into, the natural environment.

Clearly, both extremes are unreasonable, and the latter (and arguably the former as well) is patently impossible practically speaking. Propriety lies somewhere in between:

[102] One might have to take this point with a grain of salt. In desperate situations where one resorts to killing one's pet and eating it, the sensible thing to do, in my view, would not be to charge incoherence in the classificatory scheme itself, but to say simply that eating one's pet is the exception and not the norm. Such extraordinary cases do not threaten our sense of what it means for something to be a pet. There would be no reason to cast doubt on the validity of the claim that under ordinary circumstances, the title of pethood offers a large measure of protection against ill-usage.

use what we need, and leave undisturbed what we don't. The instrumental value of the environment to human survival and development does not sanction heedless exploitation; and the non-instrumental value of the environment does not prohibit use, only *mis*use and *ab*use. However, any instrumental use of the environment for satisfying humanity's material needs and wants has an opportunity cost in terms of the space in which we leave the environment alone, as it were. Conversely, leaving any portion of the natural environment alone has an opportunity cost in terms of the utility that might be derived from anthropogenic interference with the natural forces operant in that space and its immediate or not-so-immediate surroundings. The more use we make of the environment for purposes of producing material goods and services to satisfy our material needs and wants, the less room there is in which we can leave it alone so that pristine landscapes can remain pristine, other species continue to thrive and ecological stability be secured in the long-term. The earth's natural environment is, therefore, something absolutely scarce, not insofar as it serves as a source of raw material and sink for our waste, but insofar as it is expected simultaneously to play the dual role of serving as a material source/waste receptacle on one hand, and as a quasi-sacred, inviolable object of human worship on the other.

It might be useful as this point to revisit the earlier quote from the great economist Lionel Robbins, that "[s]carcity of means to satisfy ends of varying importance is an almost ubiquitous condition of human behaviour."[103] It should be obvious now that this condition accurately describes the human relationship to the natural environment. That this comes from an economist gives us no reason to reject it as being false. Meeting our material needs and wants by using what nature has to offer is one human end, while

[103] Robbins, 1994, 85.

spiritual enrichment and edification through reverential non-interference with nature is another human end. The satisfaction of each requires a certain manner of treating the natural environment, which happen to stand in rivalrous relation to each other. It follows, therefore, that not only is it not absurd to consider how to economize our use of the natural environment such as to optimize its overall value for humanity as a whole (including its future members, that is), it is imperative that we think in those terms. As a society, we must decide how much material consumption to forego in order to fulfill our avowed commitment to protecting nature for its own sake, and how much of nature we can reasonably and morally permissibly insist on leaving alone, given the costs of doing so.

Ch. 5 The Environment and the Economy

5.1 The issue

I have argued in the preceding three chapters for a specific kind of anthropocentric interpretation of environmental sustainability as a principle of environmental justice. I am now ready to take on the debate between compatibilism and incompatibilism as concerning the relation between the moral imperative of environmental justice and the principle of environmental sustainability on one hand and the aspiration for ever greater material wealth on the other. Generally speaking, one of the key implications of the compatibilist thesis, on any subject matter, is that it obviates the need to choose between two claims, whether they are empirical or normative, since you can have them both. By contrast, incompatibilism, on any subject matter, commits one to making a choice between incompatible claims. In theory, therefore, incompatibilists can be further divided into different sub-categories according to their positions on the specific claims involved.

In the debate about free will and determinism, for example, the compatibilists do not need to, while the incompatibilists must choose between the thesis of freedom of the will and that of determinism. There are, however, a critical distinction between compatibility debates such as this one and compatibility debates such as the one about economic growth and environmental sustainability. First, not only is the choice between believing in free will and believing in determinism not inherently moral, it is also purely theoretical in the sense that it has little impact on the practical level in terms of what we ought to do and how we ought to do it. The determinist is likely to deliberate no less than everyone else, and the believer of free will is unlikely to act as though their beliefs,

desires and conduct are utterly random and defy causal explanations. By contrast, the choice between and/or ranking among norms bear directly on how individuals and societies ought to conduct themselves or organize their affairs. Unless one believes that two or more norms are capable of coming into conflict in practice, one would unlikely feel it necessary to face what to them would be the counterfactual question of how potential conflicts might be adjudicated. Falsely believing in compatibilism, therefore, would preempt a judgment precisely where one is critically needed. Such failure means that to the extent a set of institutions, policies and cultural and moral norms are inherently biased in favor of any one member of the incompatible set, the other(s) must be compromised. And if and when it is the lesser value that is privileged by the status quo, the greater value necessarily ends up being sacrificed.

Such, in fact, is precisely the situation with the imperative of economic growth and that of environmental sustainability. Even though environmental sustainability, as an overarching principle of environmental justice, is the greater of the two goods (relative to which economic growth is a mere means, prevailing institutions, policies, and cultural and moral norms in most contemporary societies pervert our normative priorities and are geared primarily towards encouraging material production and economic growth. Gains on the environmental sustainability front are, under those conditions, left to chance, which are necessarily poor. And one would have no reason to wish and still less to try to challenge the status quo so as to correct this inherent bias against the greater good unless one was convinced of the delusional nature of compatibilism, and felt compelled to choose in ways consistent with our nominal normative priority. There is simply no underestimating, therefore, the practical difference one's stance on the compatibility

question would make to how she thinks about how economic institutions and policies ought to be designed and economic life organized more generally speaking.

Two concepts feature centrally in the compatibility debate: “possibility” and “constraint”. It would be helpful, I believe, to begin by getting clear on the meaning of these terms, familiar they may seem. Consider “possibility” first. The bounds of what is possible, of what can be the case, are defined by whatever we would identify as laws, or rules, or principles. There are different kinds of laws, rules, and principles. The laws of physics define what is physically possible; positive laws define what is legally possible; rules of logic define what is logically possible, the moral law defines what is morally possible, and, the laws of the market define what is possible in a market condition, and so forth. The meaning of statements such as “X is possible” and “you cannot do X” depends on the context; it depends on the type of law relevant to the issue at hand. What is possible in one sense, according to one law may not be in some other sense according to some different law. So one’s stance on the question of whether the earth can support unlimited economic growth importantly depends on one’s view about the relation between the laws that govern the economy and those that govern the natural environment, or, to another way, what is possible according to one set of laws and what is possible according to another. It would seem to be logically possible for one to believe that the laws that govern the behavior of the human economy are somehow independent of, and not themselves bound by the laws governing the planetary environment. I believe it is fair to attribute this belief to most proponents of compatibilism, even though some have expressed it more explicitly and with greater rhetorical flare than others.

For example, one writer has alleged to have identified a "materialist fallacy", which to him refers to "the illusion that resource and capital are essentially things, which can run out, rather than products of human will and imagination which in freedom are inexhaustible."[104] The writer calls this "one of the oldest of economic delusions", and that it is premised on a category mistake. "Because economies are governed by thought," he contends, "they reflect not the laws of matter[105] but the *laws of mind* (emphasis mine)."[106] The assumption is that the "laws of matter" somehow do not constrain the mind insofar as the latter is governed by separate "laws of mind". To assess this assumption, we must first know what exactly a constraint is or how to properly apply the concept. This naturally leads us to the closely related questions about what it means to overcome a constraint. And if a constraint can be overcome, and has been, is it (still) a constraint? Wilfred Beckerman, for example, has mocked the very idea of calling removable constraints constraints.[107] The obvious error in such thinking is that the very concept of overcoming presupposes that of constraint. Moreover, a removable constraint is not the same as a removed constraint, for until a constraint has in fact been overcome, it constrains, assuming, again, we have a reasonably good sense of what it means for a constraint to be removed. This distinction is another one that is dismissed by Beckerman, who claims that we will never run out of resources because *anything* is *potentially* a form of resource (since anything can potentially be rendered useful for human purposes), and we will never run out of things with such potentials.[108] But this argument obviously relies

[104] George Gilder, *Wealth and Poverty* (New York: Basic Books, 1981), 232.
[105] Here Gilder is referring to the laws of thermodynamics, which he discusses on a previous page.
[106] Gilder, 1982, 263.
[107] Wilfred Beckerman, *Small is Stupid: Blowing the Whistle on the Greens* (London: Duckworth Publishers, 1995).
[108] Beckerman, 1995.

on a sleight of hand that blurs the line between possibility or potentiality, probability, and actuality or reality.

An adequate definition of the notion of constraint, therefore, must capture these considerations. One that meets this requirement is given by Sanjay Reddy, according to which "[a] constraint faced by an agent is a feature of the world that can reasonably be judged to have the property that the agent cannot change it *without substantial cost or difficulty, if at all* (emphasis mine)."[109] On this definition, not only are constraints a ubiquitous fact of life, indeed, they must include any fact at all the alteration of which entails costs of any significance to an agent. This means, of course, that to overcome any one constraint at least one other kind of resource than what is the subject of the constraint must be available to an agent, and in sufficient amount. Moreover, it suggests that the concept of constraint is inherently context-relative: how greatly some fact constrains a particular agent depends on her specific capacities, and aspirations, among other things. The disagreement between compatibilists and incompatibilists would be, accordingly, is more appropriately characterized as about whether the facts that need change in order for economic growth to continue indefinitely can in fact be changed in a way that is worth the expected benefits than it would be about whether there are facts about the environment that *could* constrain economic growth. The latter question is trivial, the first is not.

Generally speaking, compatibilists appeal to the power of two "laws of mind" through which constraints on economic growth imposed by the "laws of matter" can be overcome. The first is human ingenuity in the areas of technology and engineering, the

[109] Sanjay Reddy, "Apparent Constraints in Normative Reasoning," in *Current Debates in Global Justice*, eds. Gillian Brock and Darrell Meollendorf (Dordrecht, The Netherlands; Norwell, MA Springer 2004), 120.

other is the power of the market system as a behavior coordination mechanism. While there are some obvious connections between the power of technology and that of the market, they are nonetheless not the same. It would be important to keep the arguments for each separate if we want to evaluate them properly. As I hope will become obvious shortly, while the arguments about technology really are pivotal to the compatibility question itself, and that arguments about the market system are in fact inherently neutral with regard to that question. This latter fact tends to be overlooked in part owing to the contingent fact that compatibilists are also likely to be staunch defenders of the market system who are either skeptical about or hostile to governmental involvement the economy. But the impression this constant conjunction creates, that the market somehow constitutes a mechanism that can render compatibilism true, is really an illusion. I will take up the issue of technology first, and defer the discussion about the market to 5.6.

5.2 IPAT

To understand if technology can help reconcile any potential conflicts between economic growth and environmental sustainability, we could do worse than first determining just what role technology is supposed to play in the economy and where it stands relative to other factors that have implications for anthropogenic environmental impact. As with many concepts, "technology" is easier to use than to define. Frederick Ferre has defined technology as "practical implementations of intelligence."[110] This elegant definition encapsulates what I believe are the necessary and sufficient conditions for the application of the concept, of which there are three: that it is based on empirical

[110] Frederick Ferre, *Philosophy of Technology*, *Georgia University Press*, 1995 (originally published by Englewood Cliffs, NJ: Prentice Hall, 1988), 26.

(though not necessarily modern scientific) understanding, that it is embodied, and that it is used as an instrument for some productive (broadly construed) end. Technology, on this definition, is essentially a tool, the exosomatic extension of our biological organs,[111] used to augment the productivity of human labor, with respect, specifically, to two different kinds of products: useful goods, and useless wastes.

A role must be defined by reference to a set of relations. The role of technology in determining an economy's environmental impact is captured by what is now widely known as the 'I=PAT' formula. In 1971, Paul Ehrlich and John Holdren jointly formulated what they call a "theorem" (supposedly demonstrably true) that purports to capture the factors determining the aggregate environmental impact of any population. The theorem read as: I = P.F, where "I" is (aggregate) environmental impact (of a population), "P" is the size of the population and "F" is environmental impact per head.[112] A few years later, this original formulation was modified, in part in response to criticisms by Barry Commoner, to represent explicitly the two factors determining F, namely, consumption level of economic output, and the environmental impact per unit of economic output consumed.[113] The revised theorem reads: I = P.C.T, where C is the number of units of economic output consumed per head and T is environmental impact per unit of economic output, as determined by the productive technology used. That formula eventually permutated into its current form: I = P.A.T, where A is equivalent to C, and stands for the measure of affluence, of which units of economic output consumed per capita is, by definition, the direct measure.

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[111] Wolfgang Sterrer, "Human Economics: A Non-human Perspective," *Ecological Economics*, no. 7, 1993, 184.
[112] Paul R. Ehrlich and John P. Holdren, "Impact of Population Growth," *Science*, Vol. 171 (26 March), 1212-17.
[113] Barry Commoner, *The Closing Circle: Nature, Man, and Technology* (New York: Knopf, 1971).

To understand the place of the IPAT equation in our understanding of environmental issues, it is of paramount importance to be clear about the precise nature or status of the equation, about what it does and does not do. The relationship captured by the equation, as is originally intended, is "mathematical identity"; and it is, therefore, "true by definition."[114] It serves the purpose of computation of quantity, and in that respect, it is on a par with an equation that says that the number of calories one consumes daily is a function of the amount of food and drink one takes in and the number of calories per unit of intake. What the equation does not do is represent causal connections among events, since none of I, P, A or T are events. They are standing conditions. It makes no sense to ask the question, the type of which is routinely asked in discussions of causation, whether I would have occurred had either P, or A, or T not. Since, as a mathematical identity, the IPAT is necessarily true, meaningful criticisms of the equation must be, and often has been, based on grounds other than its truth value. For example, it has been criticized for being too simple and incomplete.[115] But these complaints are at best frivolous and at worst ill-conceived. They tend to confuse and conflate three different things: theorems, theories, and the use of theorems.

Theorems, as symbolic representations of the world, by definition simplify what they purport to represent. But theorems are not by themselves theories, and only a constitutive, albeit often important, element in them. Certainly any serious theory about anything at all cannot contain a single theorem and nothing else. While any serious theory of the relationship between the environment and the economy must say a great

[114] James Gustave Speth, *Red Sky at Morning: America and the Crisis of the Global Environment* (New Haven, CT: Yale University Press, 2004), 120.
[115] Paul Ekins, *Environmental Sustainability and Economic Growth: The Prospects for Green Growth* (London: Routledge, 2000).

deal more than IPAT, no theory about this subject has any credibility if it did not include it. Moreover, any theorem or theory, just like any other kind of tool, can be put to better or worse uses by different individuals. Little is gained by confusing the assessment of how wisely or unwisely an agent makes use of a tool with the assessment of the quality of the tool itself. To accuse the "I = P.A.T" equation of being too simple and incomplete is akin to accusing "$E = mc^2$" of being too simple and incomplete.

It seems to me that the charges of simplicity and incompleteness, for whatever rhetorical force they may pack, really reveals a deeper failure to understand the basic distinction between mathematical relations and causal or empirical ones. Paradoxically, this is a failure from which even some of those who overtly acknowledge IPAT's status as a mathematical identity suffer. James Gustave Speth, just quoted, for example, claims, seemingly innocuously, that "the fact that [the equation] must be true and the fact that it is handy and revealing, have led some analysts to rely on it to excess. So as we use it we want to ask what it obscures as well as what it reveals. It tells a part of the story, but not the whole story".[116] It is not immediately obvious what it means to rely on the equation "to excess", so it is hard to ascertain, on the basis of this statement, just what the nature of the problem may be. But never mind. As for the rest of this comment, it is unobjectionable, but not particularly interesting. The same, after all, can be said about "$E = mc^2$". What is not so innocuous though is what Speth says next:

"Let us begin with the three IPAT drivers: (i) population, (2) affluence, and (3) technology. We will round out the picture by adding to this list: (4) poverty; (5) market failure, (6) policy and political failure, and (7) the scale and rate of economic growth. And at an even deeper level we will look at (8) the nature of our economic system and (9)

[116] Speth, 2004, 120.

our culture and its values…[and] (10) the forces loosed upon the world by the globalization of the economy."[117]

What Speth says here belies his own explicit acknowledgement that IPAT is an equation (or, as Ehrlich and Holdren originally conceived of it, a theorem). It is plainly a category mistake to suggest that population, affluence and technology, within the context of the equation, are somehow items on some "list" of things that would not be complete until more items are added. This equation, *as an equation*, needs no "rounding out". It is not that items (4) to (10) do not matter – quite the contrary – but they are not on a par with P, A, or T. They name social forces (which are things that comfortably belong in neither the "event" nor the "standing condition' category) that influence, and thereby help explain, the value of P, A and T for particular societies at particular times.

Moreover, the forces here named do not even stand on a par with one another, that is, *among* themselves. Surely, poverty (item 4), is at once, though in different ways, and on different levels (see below) attributable to market failure (item 5), policy and political failure (item 6), the scale and rate of economic growth (item 7), the nature of our economic system (item 8), our culture and its values (item 9) and the forces loosed upon the world by the globalization of the economy (item 10). Just as surely, item 10 is itself importantly caused by item 9. The confusion multiplies on its own. To be fair, Speth does say that items (8) through (10) name forces that lie at "an even deeper level" than, presumably (4) through (7). We can understand this to mean that (8) through (10) causally determine or influence (4) through (7). This would indeed, at a first glance, seem to be on the right track, until we realize that if we are to allow this interpretation, then we must further differentiate amount (8) through (10). Isn't it the case that in the final

[117] Speth, 2004, 120.

analysis, it is our culture and its values (item 9) that ultimately determine our economic system, our social institutions (item 8) and the general contours of human history (item 10)?

But notice that unlike P, or A, or T, none of the factors named in (4) through (10) is the sort of thing that lends itself to precise quantification or measurement, and so none of them can have any place in anything like a theorem. Items (4) through (10) on Speth's "list" rightly remind us that when it comes to understanding the relationship between society and the natural environment, science is necessary but not sufficient, and that we ought to guard against either reductionism or determinism. While this reminder is well-intentioned and sound as far as it goes, Speth's formulation of it is misleading insofar as it runs roughshod over basic logical distinctions. Such a misconception has contributed more than its fair share towards the persistence of confusion, the plenitude of platitude and the slowness of genuine progress in environmental discourse.[118]

5.3 The population issue

Compatibilists and incompatibilists are agreed that population growth rate should be checked. Systematic treatment of the issue of population growth is usually traced back to the British economist Thomas Malthus, who, in his 1798 anonymous treatise, "An

[118] In "A Reply to My Critics" (*Journal of Agricultural and Environmental Ethics*, No. 20, 2007, 387-405), Bryan G. Norton answers the charge that, at 600 pages, his book *Sustainability: A Philosophy of Ecosystem Management* (University Of Chicago Press, 2005), the subject of a special issue in that journal, is not just too big, but that it is really two or three different books indecently yoked together. He writes: "I wrote this book because every time I gave a lecture on some aspect of the argument for a new approach to valuation and management, I heard the same thing: you are addressing some part of the sustainability puzzle, someone would say, but you haven't dealt with…' and they acted unconvinced, because they didn't see how my proposal added up to a complete re-thinking of how we evaluate human driven environmental changes." (388) What Norton is describing is another manifestation of the very problem I allude to here. "Completeness" can be judged either horizontally or vertically. IPAT is horizontally complete in the sense that it leaves nothing out in terms of quantitative variable on which the value of I computationally depends, but it is certainly not vertically complete since each of P, A and T is dependent on many other factors which do not show up in the equation.

Essay on the Principle of Population as It Affects the Future Improvement of Society" argued that the exponential increase in population is bound, if unchecked, to outstrip the land's capacity to produce enough food to feed it. The basic principle that when demand of food exceeds supply, such as would take place under the condition of exponential population growth coupled with arithmetical growth of agricultural yield, food scarcity makes for social misery, is absolutely unassailable because it is a tautology. When there is little to go around for all, each gets but a little, and the more there is, the less each gets. The only way to dispute this claim is if one has altogether failed to understand its meaning. It follows necessarily from this principle that if a society is to avoid the continuation or the intensification of poverty, it must either check population growth or increase agricultural yield, or both.[119]

Pessimistic about the prospect for increasing agricultural productivity, Malthus argued for population control. Here, he made various controversial assumptions about the forces that can or cannot be counted on to curb fertility rates. For example, he assumed, controversially, that only the well-educated are capable of voluntary birth control, and that the poor must be compelled by circumstances to perform it. This was the basis of Malthus's opposition to welfare benefits for the poor (by means of the English Poor Laws), which he thought would not only give them the disincentive to work but also give them no reason to restrain themselves with respect to procreation. Recent demographic studies have shown the complexity of voluntary birth control, proving the simplistic nature of Malthus's conclusions about the exact mechanisms needed to achieve this end.

[119] Malthus's tacit assumption is that per capita demand for food, which is a basic necessity rather than a mere want, is relatively inelastic compared with that for other types of goods. Therefore, deliberate restriction in that regard would be superfluous.

However, what such findings do not show is that Malthus was wrong either about the need for population control or about the fact that public policies do matter.

Two strands of technological optimism must be distinguished from each other. On one, it is based on a general confidence in the intellectual and practical capacities of humanity. This is by far the more commonly held view among technological optimists. The other strand is now largely marginalized but it has historically held sway; it contends that population growth must be encouraged, or at least not discouraged, because it facilitates technological advancement. On this view, people are not a liability, the way Malthus and Neo-Malthusians conceived of them, but rather an asset primarily, as specimen of *human resources*. More people mean greater pool of intelligence and the wisdom from which solutions to humanity's problems, including the problem of limits to agricultural productivity will emerge.[120] The business management expert Julian Simon is one of the best-known advocates of this view.[121] The argument exaggerates half a truth, and is vitiated by what it gets wrong. Minds do not exist in disembodied form but are attached to bodies to form composite beings that must be fed, clothed, sheltered, educated and otherwise cared for – all of which require the consumption of environmental resources. Moreover, good ideas are few and far between but everybody consumes resources, and ultimately, even the best of ideas cannot accomplish the feat of transcending the laws of nature. Dubious in theory, the people power theory has had disastrous consequences in practice. Mao Zedong, the founding father of modern China, was a devout believer. He quashed critics and put in place policies that encouraged rapid

[120] John R. Weeks, *Population: An Introduction to Concepts and Issues*, 8th edition (Belmont, CA: Wadsworth/Thomas Learning, 2002), 95.
[121] Julian Simon, *The Ultimate Resource* (Princeton, NJ: Princeton University Press, 1981), 1.

population growth, policies to which many attribute China's unmanageable population size.

Not only does the debate between compatibilists and incompatibilists about technology assume that population growth rate *should* be checked, it also largely assumes that world population will eventually stabilize, and may even decline, albeit perhaps not as soon as we would like. What divides the two sides, then, is the question of whether, assuming any particular scenario of the long-term trajectory of P, technological improvement can offset the growth in per capita economic consumption and keep the aggregate environmental impact of the population safely within ecologically sustainability limits.

5.4 Technological Optimism: the Inductive Argument

Let me begin this section with a few additional clarifications of what I am not concerned with here. First, I am not concerned in this discussion with whether technology as such, pre-modern, modern or any other variety, is good or bad. I am not concerned, not directly anyway, with the arguments of antitechnologists such as Martin Heidegger and Jacques Ellul and the ordinary Luddite. Moral objections to the "technological *a priori*", that is, the "machine way of thinking", whose essence is the readiness, willingness and preparedness to "put exact science to use,"[122] does not by itself commit one one way or another on the question of whether technology could not accomplish the feat of overcoming constraints imposed by nature. Nothing is gained by conflating these arguments. Secondly, the current debate is not about the virtues and vices, especially

[122] Frederick Ferre, *Philosophy of Technology* (Georgia University Press, 1995; originally published by Englewood Cliffs, NJ: Prentice Hall, 1988), ch. 5.

from the environmental point of view, of modern sciences and the materialistic outlook it presupposes. I already answered in chapter 3 some of the unsubstantiated charges against modern science in relation to the questions of the nature of value and the value of nature. Knowledge is by itself practically inert. In fact, by extension, technology is also neither intrinsically harmful nor intrinsically beneficial. Human agents alone are praiseworthy or blameworthy for putting knowledge and technology to this or that use, for this or that purpose, based on this or that motive. When people vandalize the natural environment by abusing science and technology, our moral indignation is misdirected if we blame science and technology, who are themselves collateral damage, for the crime.

What I am concerned with is the role technology plays in the phenomenon sometimes referred to as "ecological modernization", another name for the "greening" of industry. One writer characterizes "ecological modernization" as "advancing technology to achieve ecologically appropriate technological systems, designed to avoid waste and pollution by dramatically reducing the total use of energy and material, particularly in the form of hazardous substances."[123] This kind of language is sufficiently loose and vague, such that it lacks empirical import. Contrary to what is implied, complete elimination of waste and pollution from economic production and consumption is a physical impossibility, and whether and by how much any particular improvement (or "improvement") in technology can reduce the aggregate use of energy and material depends on changes in the number of units of output. Technology can reduce, up to a

[123] Douglas Torgerson, *The Promise of Green Politics: Environmentalism and the Public Sphere* (Durham and London: Duke University Press, 1999), 144. The concept is widely accepted and used. See, for example, Robyn Eckersley, *The Green State: Rethinking Democracy and Sovereignty*, (Cambridge, MA: MIT Press, 2004); Andrew Dobson, *Green Political Thought*, 2nd ed. (London: Routledge, 1995). Dobson cites A. Weale's *The New Politics of Pollution* (Manchester University Press, 1992),that discusses the idea at length. The term "ecological modernizers" is used as if its significance is beyond doubt. Who is an ecological modernizer exactly?

point, the total environmental impact *per unit of economic output*, but this reduction can of course be cancelled out by increase – assuming constant population size – in the level of per capita consumption of economic output. Yet it is precisely the expressed goal (or one of them) of the imperative of unlimited economic growth to increase, without limits, per capita consumption of economic output. Environmental sustainability is not, in the final analysis, about environmental impact per unit of economic output, but society's aggregate ecological impact. It is straightforwardly fallacious to infer what must be true of the role of technology in the second from what might be true of it in the first.

The tension between unit measure and aggregate measure is a pervasive phenomenon that manifests itself in relation to all different kinds of subject matters. Reduction in unit measure, when not accompanied by restriction on increase in number of units, can never lead to reduction in aggregate measure. In fact, it has been observed that reduction in unit measure in terms of whatever substance under consideration can often spur increases in the total number of units consumed, leading to increases in the total consumption of the substance in question. The phenomenon, sometimes referred to as the rebound effect, is a familiar one. Most of us know from personal experience that we tend to eat more cookies if we know they are low-fat, which can result in greater aggregate fat and/or calorie intake. When their cars are more fuel-efficient, people tend to drive them more than they would less fuel-efficient ones, which sometimes cancels out the intended environmental benefits of the greater fuel-efficiency. We ignore the pervasiveness of the rebound effect in all areas of individual and social life at our own peril. As the bioethicist Daniel Callahan has noted, "[I]t is typically the case that…as the price per unit of the use of technology drops, the population of potential users of the technology increases. That

has been the story of the VCR, the microwave oven, and the personal computer, to take some obvious examples in our personal lives, and the phenomenon is equally pervasive in healthcare. The desire to expand the overall market for a medical technology is a powerful incentive to reduce unit costs... It should hardly astonish us then that there is simply no evidence, in this or any other society, that a widespread and diligent use of technology brings down costs in general, even if it brings some discrete and isolated savings here and there."[124] The same principle applies equally well to the trends in the aggregate environmental impact of the economy.

Why, then, aside from confusion or ignorance about these well-established laws of human behavior, would anyone believe otherwise? There are three ways to understand the epistemic status of the belief about the power of technology to keep an ever-expanding global industrial economy ecologically benign and sustainable. We can treat it either as a metaphysical claim or as an empirical one, or as some kind of hybrid. Metaphysical claims are *a priori*, not unlike faith, and require no empirical support, but this is not the case, of course, for empirical ones. I do not address the issue of the epistemic justifiability of the metaphysical belief in the power of technology. Indeed, the line between such a belief and hubris is a fine one. If economics is to have respectability as an academic discipline, faith should have no place in it. Thus I will treat the claim that there are no environmental constraints to economic growth as a synthetic *a posteriori*, that is, a claim that is in principle *falsifiable*, the way I believe it ought to be treated, and examine whether it meets the demands of both science and logic. Specifically, since the claim is (1) about the future and (2) about facts arguably not directly observable, it can

[124] Daniel Callahan, *What Kind of Life: A Challenging Exploration of the Goal of Medicine* (New York, NY: Touchstone, 1990), 89-90.

only be defended through inference of one kind or another. In this section, I discuss the weaknesses of the standard *inductive inference* about the *future* trajectory of technology on the basis of its track record. In the next section, I will consider the question of whether we might be able to deduce both the powers and the limitations of technology – though mostly the latter – on the basis of the relevant laws of nature.

The basic structure of the inductive argument tends to be transparent. It contends that since technology has repeatedly worked in the past in bursting the bounds of nature, it will continue to do so in the future. Mark Sagoff's argument offers a good example. According to Sagoff, whose argument about preference and environmental valuation I discussed in the previous two chapters, "[i]t is simply wrong to believe that nature sets physical limits to economic growth."[125] He identifies three "misconceptions" about this issue: (1) that we are running out of raw materials, (2) we are running out of food and timber; and (3) we are running out of energy. He cites as his evidence samples of past technological achievements that expanded the economy's resource base through either substitution or efficiency improvement.[126] And he cites likeminded economists and, by way of them, such dubiously neutral sources as a report prepared by the USA Office of Technology Assessment.

Even leaving aside the obvious problem of question-beggingly citing economists who are similarly upbeat (which most of today's economists are) about the prospect of technological solution to all environmental problems, and favorable projections, this argument has little to recommend it. The strength of an inductive argument that infers the

[125] Mark Sagoff, "Can Technology Make the World Safe for Development?", in *Global Sustainable Development in the 21sth Century*, eds. Keekok Lee, et al (Edinburgh: Edinburgh University Press, 2000), 117.
[126] Sagoff, 2000, 117-126.

future based on the past depends on (at least) two things: (1) the quality of the information about the past, (2) the validity of the principle on the basis of which the future is held to be relevantly similar to the past. When either (1) or (2) is weak, the conclusion is poorly supported. But this is exactly the case with Sagoff's argument. While none of the technological achievements that Sagoff cites is factually mistaken, absent in Sagoff's argument is any mention of a parallel history of the environmental devastations wrought by technology. Time and again technology has proven to be a double-edged sword, both of whose edges being equally sharp. As often as not, it "bites back" at us with unintended and undesirable and serious and sometimes irreversible, consequences.[127] Some have called this phenomenon "the paradox of technological development."[128] Sagoff is, therefore, blatantly biased in his selection of evidence about technology in favor of his preconceived conclusion.

"Against false premises and unsound reasoning," John Stuart Mill wrote, "a good mental discipline may effectually secure us; but against the danger of *overlooking* something, neither strength of understanding nor intellectual cultivation can be more than a very imperfect protection."[129] An inductive argument about societies' future experience with technology that patently misrepresents their past experience lacks credibility. What is at stake, it bears repeating, is not whether technology in the future will solve *some* problems, the way it has in the past – that is not much in doubt – but whether it will not create more problems than it can solve (which it cannot indubitably said to have done in

[127] Edward Tenner, *Why Things Bite Back: Technology and the Revenge of Unintended Consequences*, (Vintage, 1997).
[128] Paul E. Gray, "The Paradox of Technological Development," in Technology and Environment, edited by Jesse H. Ausubel and Hedy E. Saldovich, Washington, DC: National Academy Press, 1989, 192.
[129] John Stuart Mill, "On the Definition and Method of Political Economy," in *Philosophy of Economics: An Anthology*, edited by Daniel Hausman, 2nd edition (Cambridge University Press, 1994), 66.

the past) and allow economic expansion to continue without at the same time increasing the chances of wholesale ecological collapse. When we do correct the empirical premise of the argument, we have at least as much reason to despair as we do to be sanguine about the reliability of technology.

But even then it still needs asking in what sense the future is like the past, not generally speaking but specifically, with respect to technological augmentation of humanity's extractive, productive and waste management capacities? Sagoff relies on a linear model of the universe where each technological breakthrough is treated as a self-contained instance exemplary of a pattern, rather than as a constitutive part of a process that leads to changes in the background ecological conditions. This model makes no provision for the law of unintended and unpredictable and uncertain consequences, and is particularly unsuitable for the inductive purpose at hand. The planetary environment is a complex system, which is defined as "a network of many components, whose aggregate behavior is both due to, and gives rise to multiple-scale structural and dynamic patterns which are not inferable from a system description that spans only a narrow window of resolution."[130] Generally speaking, complexity poses epistemological challenges. This is true of systems of vastly different scales or nature. One celebrity among complex systems is the weather system, an area in which chaos theory has seen many fruitful applications. Computer networks are another example. The escalating level of complexity of these networks is increasingly being blamed for mishaps that are practically unpredictable. As two leading experts on computing noted regarding large scale computer break-downs:

[130] Raphaël Proulx, "Ecological Complexity for Unifying Ecological Theory Across Scales: A Field Ecologist's Perspective," *Ecological Complexity*, Vol. 4, Issue 3, Sept 2007, 85-92.

"The threat is complexity itself", and "[t]hings break, complex things break in complex ways."[131]

The human economy, of which technological application is an integral part, is a sub-system relative to the earth's ecosphere, which is a complex system. In such a relationship, there are serious "limitations of decision on the level and combination of inputs in [the] sub-system as a means of controlling the general system."[132] Within the ecosphere local events can have far-reaching, both temporal and spatial, consequences that we simply would not be epistemically equipped to predict. This means that the argument for technological optimism is based as much on ignorance, and ignorance of ignorance, as on knowledge, or knowledge of knowledge. Ignorance is bad, but ignorance of one's ignorance is worse. While a technological skeptic and a technological optimist may be indistinguishable with respect to their first order ignorance, they part company at the second-order. While the skeptic counsels caution based on his knowledge of his ignorance, the confidence of the optimist, by contrast, is based on his ignorance of his ignorance. Such confidence inspires confidence only in the equally ignorant.

5.5 Technological Optimism: the Deductive Counter-Argument

The weakness of the kind of inductive argument adduced by Sagoff for technological optimism does not entail that the conclusion is false, only that it does not follow from certain premises. In this section, I will buttress my argument against technological optimism by deducing its falsehood from the mother of all laws of nature,

[131] John Schwartz, "Who Needs Hackers," the *New York Times*, September 12, 2007.
[132] Charles Perrings, *The Environment and the Economy: A Theoretical Essay on the Interdependence of Economic and Environmental Systems* (Cambridge [Cambridgeshire]; New York : Cambridge University Press), 1987.

as if were, namely, the laws of thermodynamics. Thermodynamics is the study of the behavior of matter and energy. There are four laws in all, though the first two are the most relevant for our purpose here. The First Law is the law of the conservation of energy. It states that energy can neither be created nor destroyed, it is only "transferred from one body or system or part of the universe to another". The notion of "energy" is used here in a sense different from the sense in which we ordinarily use the concept. While in our everyday discourse, we mean by "energy" what is immediately useful to do work, in thermodynamics the notion refers also to "potential energy". So while we do, casually speaking, "consume" and "spend" energy, from the point of view thermodynamics, we cannot do either since energy is essentially indestructible. What we can, and do do is to transform it from more to less useful forms. Now the First Law, like (most) other laws of science, "do[es] not distinguish between the forward the backward direction of time."[133] In other words, it is timeless and in itself would tell us nothing about whether within any thermodynamic system there is a necessary pattern to the change in the ratio of useful form of energy to useless form of energy. This is provided by the Second Law, which states that in a closed thermodynamic system (see below), the amount of useful energy must continue to increase. This law is sometimes called "the entropy law", which states that entropy, which is a measure of energy available for doing work (defined in physics as the capacity to dislocate objects of certain mass over certain time period) must increase *in a thermodynamically closed system*. It is a distinction of the Second Law that it "distinguishes the past from the future, giving a direction of time."[134]

[133] Stephen W. Hawkins, *A Brief History of Time: From the Big Bang to the Black Holes* (Bantam Books, 1998), 152.
[134] Hawkins, 1998 145.

While the Second Law is not in principle inviolable; it is so extremely unlikely for it to be violated that for all practical purposes, it holds necessarily.[135]

The Second Law rules out the very phenomena of renewal and cyclicality, *but only at the global scale and within a thermodynamically closed system* (or as it is sometimes called, an "isolated" system). In such a system, entropic increase eventually leads to uniform temperature throughout the entire system, a "heat death", a state in which the system contains no more available (or "free") energy useful for doing work. Strictly speaking ,the universe as a whole is the only system that does not engage in material or energy exchange with its surroundings, because there is nothing outside of it. Therefore, everything else, including planet earth, is a sub-system relative to the universe, and is, for that reason, thermodynamically open. The loss of useable energy within it is or can be compensated for with net energy input from exogenous sources. Life on earth is both essentially and ultimately sustained by the constant energy income the planet receives in the form of solar radiation.[136] Each living organism, such as an individual human being, and collections thereof, such as a society, is of course also a thermodynamically open system in its own right. They are continually engaged in material and energy exchange with their environmental surroundings. If such an open system behaves in ways that perturbs the materials and energy balance between itself and its environment, either choking off supply of material and energy or building up waste directly harmful to itself, or both, its survival is immediately jeopardized.

This is the general background against which the power and the limits of modern industrial technologies must be understood. What we can show, on the basis of these two

[135] Stanley W. Angrist, *Order and Chaos: Laws of Energy and Entropy*, New York: Penguin Books, 1967.
[136] Robert W. Christopherson, *Geosystems: An Introduction to Physical Geography*, 2nd edition (Macmillan Publishing Company, Inc., 1994), 586.

laws, and given certain reasonable assumptions of the future trajectory of population change, is that even if it is technically and theoretically possible to continue to expand the scale of the human economy, practically speaking, it will become increasingly costly to try to do so, in not only monetary but also other terms, such as risks to human health. And the cost will eventually become too great to be worth the benefits. I will discuss the role technology plays in three areas of human impact on the environment: (1) human consumption of renewable resources, which consist primarily of biomass but also include such resources as fresh water and clean air; (2) human consumption of non-renewable resources such as fossil fuels and minerals and (2) deposit of waste into the ecosphere.

Renewability is the mark of organic entities. It does not, however, necessarily shield the resource in question from exhaustion, for when the rate of extraction exceeds the rate of replenishment, it is possible for a renewable resource to run out for all practical purposes. According to the oft-quoted figures worked out by Peter Vitousek,[137] humanity already appropriates the earth's biomass at a rate that far exceeds its natural rates of renewal. Human cultivation must be resorted to in order to keep supply up with demand. This essentially involves manipulation of the productive and collection factors of organic species: medium (water, soil), feed or fertilizer, harvesting methods, etc. Let us use agriculture as an example. For much of its history, agriculture was labor intensive and technologically primitive. Human control over agricultural yield was relatively limited because we had little control over those factors - weather, water availability, soil quality, the genetic make-up of the crops, and pest – on which it depended. While technology and farming practices continued to improve through the course of history, it

[137] P. M. Vitousek, P. R. Ehrlich, A. R. Ehrlich, P. A. Matson, "Human Appropriation of the Products of Photosynthesis," *BioScience*, no. 36, 1986, 368-73.

was not until the Green Revolution when agriculture was fully industrialized, becoming an energy-intensive, highly mechanized, and technologically advanced endeavor. Through aggressive manipulation and control of water supply, the nutrient profile of the soil, greenhouse technologies, genetic modification and pest extermination, modern industrial agricultures is vastly more productive than had ever been the case in history, encouraging many to dismiss Malthus.

But industrial agriculture ravages the environment. Its achievements notwithstanding, the Green Revolution of the 1960s and the 1970s, also left behind an atrocious environmental legacy.[138] These include ground water pollution, soil erosion, aquifer depletion, loss of genetic diversity, among others. Monoculture, a key feature of high-yield modern industrial agriculture, is fundamentally unsustainable.[139] It deprives societies of the margin of safety provided by crop diversity, leaving it with few viable backup crops to turn to should serious ailment inflict the variety on which it disproportionately depends.[140] And as genetic engineering becomes more prevalent, there are growing concerns about the assorted risks for cross contamination, and of course, negative impact on the health of humans, on other species, and on the ecosystem as a whole. Last but not least, the recent spike in interests in bio-fuel production all but guarantees to compound the ecological problems agriculture already faces, including escalating pressure on dwindling global fresh water supply. As recent studies on the long-

[138] Charles C. Mann, "Future Food: Crop Scientists Seek a New Revolution," News Focus, *Science*, Vol. 283. no. 5400, 15 January 1999, 310 – 314.
[139] Reem Hajjar, et al, "The Utility of Crop Genetic Diversity in Maintaining Ecosystem Services," *Agriculture, Ecosystems & Environment*, Vol. 123, Issue 4, February 2008, 261-270; Miguel A. Altieri. "The Ecological Role of Biodiversity in Agroecosystems," *Agriculture, Ecosystems & Environment*, Vol. 74, Issues 1-3, June 1999, 19-31.
[140] Dan Koeppel, *Banana: the Fate of the Fruit that Changed the World*, (New York, NY: Hudson Street Press, 2008). The book provides a rich account of the acute vulnerability of crops that can result from forced genetic homogenization.

term environmental implications of increased bio-fuel production have revealed: "A widespread shift toward biofuels could pinch water supplies and worsen water pollution. In short, an increased reliance on biofuel trades an oil problem for a water problem."[141]

The bottom line is this: we can stretch the productivity of earth's biomass – including crop, fish, timber, livestock, and any species of fauna and flora appropriated for one use or another – but only within certain naturally imposed limits, the most rigid of which being the availability of the most basic and necessary sources of life, solar radiation, water, and nutrients. Nor are these factors mutually independent: the planet's endogenous biogeochemical cycles through which carbon, hydrogen, nitrogen, phosphorus, potassium, magnesium and so forth are replenished and recycled are themselves dependent on solar radiation, water, and the earth's atmosphere. In practical terms, these brute physical, chemical, ecological and biological limits imply that the cost of overcoming them will tend to escalate as human pressure on the environment increases.[142] Efforts towards that end will likely succumb to diminishing returns in terms of economic and social benefits at the margins.

What is true of human demands for renewable resources is also true of human appropriation of non-renewable resources, such as minerals, metals and various forms of fossil fuels. While non-renewables are, by definition, ultimately depleted so long as their use is not discontinued altogether, depletion can be delayed. The economist Partha Dasgupta lists eight "innovative mechanisms" through which this delay can be effected. They fall into two categories: (1) those that involve the introduction of technologies that

[141] "Another Biofuels Drawback: The Demand for Irrigation," *Science*, Vol. 326. No. 5952, 23 October 2009, 516 – 517.
[142] Tilman, David, et al. "Forecasting Agriculturally Driven Global Environmental Change," *Science*, Vol. 292. no. 5515, 13 April 2001, 281–284.

allow the substitution of more for less abundantly available (if also less easily extractable) forms of resources, and (2) those that involve the introduction of technologies that increase the efficiency with which any given form of resource is used. However, and again, the cost of either is a function of the aggressiveness of the technological innovations required, which in turn depends how nature must be bent and manipulated to meet our needs. As the "low-hanging fruits" of non-renewable resources (i.e., what exist in highly concentrated, and therefore high-grade and easily accessible forms) run out and societies resort to resources of lesser quality and more restricted accessibility, the technical challenge and the attendant financial and other social costs involved in maintaining supply is bound to become more severe.[143] In a world governed by often rigid intellectual property rights and the imperatives of private profit and national competitiveness, this inevitably means that the poor will likely have even poorer prospect of benefiting from what technologies there are. To the extent technological innovations can solve some resource shortage problems, therefore, they may well do so in a way that perpetuate extant patterns of social and international inequality.

The bottom line, so far as non-renewable forms of resource are concerned, is that it is a *necessary ecological and thermodynamic truth* that "the more a resource is being depleted, the more energy an organism has to spend harvesting it, to the point where the net yield approaches zero"[144], because "the resource transformation process [is] one that uses energy to upgrade the organization of matter to a more useful state.'[145] Since "large

[143] Partha Dasgupta "Exhaustible Resource", *The Fragile Environment: The Darwin Lecture Series* (Cambridge University Press, 1991), 119.
[144] Sterrer, 186.
[145] Matthias Ruth, Cutler j. Cleveland, "Modeling the Dynamics of Resource Depletion, Substitution, Recycling, and Technical Change in Extractive Industries," in *Getting Down to Earth*: *Practical Applications of Ecological Economics*, eds. Robert Costanza, Olman Segura, and Juan Martinez-Alier (Washington, D.C. : Island Press, 1996), 303.

amounts of fossil fuels are used to extract minerals and fossil fuels themselves, [c]umulative depletion of a metal…increase[s] the energy cost of extracting a unit of [it].”[146] In the other direction, “the increase in the energy cost of [a metal] increases the cumulative depletion of oil, which in turn increase the energy cost of oil, and so on.”[147] What this means is that there is a “positive feedback …in which the depletion of fossil fuels and other minerals” – both of which are non-renewable resources – “feed on each other.”[148] Technology cannot circumvent this vicious circle, it only aggravates it. All of this, of course, serves to highlight the wisdom contained in the definition of the notion of “constraint” on which my argument against technological optimism rests. What it implies, as I already noted (p. 117), is that since any act of overcoming requires expenditure of resource (or entails costs to an agent), there can be no overcoming of any one type of constraint unless there is at least one other area in which the agent is not similarly constrained, or constrained to the same degree. Put another way, it takes relative abundance of one thing to overcome the relative scarcity of something else. Therefore, only local (or select), but not global (or comprehensive), scarcity can be overcome.

As acutely urgent a problem with our use of non-renewable resources as their finite supply and growing scarcity relates to the environmentally deleterious effects of the waste it generates. The most prominent issue in this connection is anthropogenic global warming, where buildup of gasses emitted from the burning of fossil fuel, among other things, in the atmosphere traps heat, thereby raising the surface temperature of the earth. To be sure, the full scale and the distribution across the globe of the economic and social consequences of climate change are difficult to predict with precision, but there is

[146] Ruth and Cleveland, 304.
[147] Ruth and Cleveland, 304.
[148] Ruth and Cleveland, 304.

considerable agreement among experts that they will probably be catastrophic, more so for poorer continents, regions, countries and people. But of course, uncertainty itself is a powerful factor in decision-making. Under some interpretations of the principle of precaution, it constitutes sufficient reason for choosing, especially in social, as opposed to individual, contexts, where risks are dispersed inter- and not intra-personally, to choose to avoid the worse consequences.[149]

Aside from efficiency improvement, whose limitations, both technical and conceptual, have already been discussed (see p. 126), the two main approaches for dealing with pollution from burning fossil fuel are: (1) shifting away from fossil fuel and towards alternative sources of energy such as biofuel and nuclear fuel; and (2) capturing and sequestering the greenhouse gasses emitted from burning fossil fuel so they do not enter the atmosphere. Recent efforts to divert agricultural output from human and even livestock consumption to fuel production illustrate the first approach, and we have seen how it in effect "solves" one environmental problem by creating and worsening others. The second approach faces insurmountable challenges of its own: not only is 100 percent carbon capture disallowed by the laws of physics, safe and cheap large scale carbon storage is still firmly in the realm of science fiction.[150]

Other kinds of pollution problems besides the greenhouse effect of fossil-fuel burning are also associated with the use of non-renewable forms of natural resources. Petroleum-based products such as plastic are typically non-biodegradable, which become

[149] Tim O'Riordan, James Cameron and Andrew Jordan, *Reinterpreting the Precautionary Principle*. London: Cameron May, 2001; Kirstin Shrader-Frechett, "Risk Assessment and Uncertainty Risk Assessment and Uncertainty," *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, Vol. 1988, Volume Two: Symposia and Invited Papers (1988), pp. 504-517. For a contrarian opinion, see Cass Sunstein's *Laws of Fear: Beyond the Precautionary Principle*, Cambridge, UK ; New York : Cambridge University Press, 2005.

[150] Elizabeth Rosenthal, "Europe Turns Back to Coal, Raising Climate Fears," *The New York Times*, April 23, 2008.

environmentally hazardous waste when disposed of. While emission from combustion fouls the air and changes the climate, non-biodegradable wastes foul the water and the soil, and threaten the health of the ecosystems inherent to or dependent on them. Another example comes from the involvement of heavy metal in industrial processes and many of their final products, which accounts for the toxicity of many forms of industrial and municipal (that is, household) wastes. Like non-biodegradable wastes, toxic wastes threaten the health of both the natural environment and human beings, directly or indirectly.

What I have tried to do in this section is *deduce* from the basic laws of nature governing the behavior of matter and energy the *necessary* truths about the prospect for indefinitely rising costs of meeting both the challenge of keeping the supply of material and energy resources up with demands and the challenge of keeping in check the generation of environmentally harmful wastes. As two economists, who happen to be Nobel prize winners, put it:

> "Saving the environment without causing a rise in prices and subsequent check of production growth is only possible if technology is invented that is sufficiently clean, reduces the use of space sufficiently, leaves the soil intact, does not deplete energy and resources… *and* is cheaper (or at least not more expensive) than current technology. This is barely imaginable for our whole range of current activities… From the above it follows that saving the environment will certainly check production growth and lead to lower levels of national income."[151]

[151] J. Tinbergen and R. Hueting, "GNP and Market Prices," in *Population, Technology and Lifestyle: the Transition to Sustainability*, edited by Robert Goodland, Herman E. Daly and S. El Serafy (Washington,

The arguments of the last two sections, set against the background of the IPAT equation discussed in 5.2, conclusively show that compatibilism is not only unjustified, it is quite ignorant and stupid. According to the logic that "[i]t *would be logically* redundant to impose a sustainability constraint on an economy in practice *if* there is good reason to expect technical progress to enable economic growth to continue, with no long-run constraint from environmental resource depletion and degradation, leaving future generations better off than today,"[152], then, the conclusion we must draw is that, insofar as compatibilism, undergirded by technological optimism, is false, a "sustainability *constraint*" on the economy would in fact need to be deliberately imposed if sustainability is to stand any realistic chance of being achieved. However, just what the nature of this constraint is, how restrictive it needs to be, and the manner in which it is imposed, and how the burdens it entails are to be shared among contemporaries depend on the distributive principles. To the question of what these principles are we will turn in chapter 6, but before I do so, we must face the issue of the market squarely, if also briefly.

5.6 The Role of the Market: Allocation versus Distribution versus Scale

What is the role of the market in relation to short-term economic growth and long-term environmental sustainability, respectively? Note first that this is a very different question from that of the role of the market in the compatibility debate per se. The issue of compatibility is essentially a *scientific* one. It ultimately turns on the question of the physical possibility of progressively reducing, through technological innovation, the

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DC: Island Press, 1992), 52-62, cited in Paul Ekins, *Economic Growth and Environmental Sustainability: The Prospects for Green Growth* (London: Routledge, 1999), 179.

[152] John C. V. Pezzey, and Michael A. Toman, "Sustainability and Its Economic Interpretations," in *Scarcity and Growth Revisited: Natural Resources and the Environment in the New Millennium*, edited by. R. David Simpson, Michael A. Toman, Robert U. Ayres (Washington, DC: Resources for the Future, 2005).

ecological impact of material production and consumption per unit, and does *not* depend on how society is organized. Of course, some economic systems are more conducive to technological innovation, and might stretch the environment a bit further, but this does not mean that under these systems compatibilism is or can be true. Aggressiveness in bending the environment for human purposes does not amount to or entail the ability to abolish limits to such efforts. Indeed, insofar as technological innovation is a particular kind of response to environmental constraints on economic growth, it is logically on a par with other kinds of responses to the same, including, of course, reigning in society's material aspirations. After all, both earning more and spending less are ways of achieving a fit between income and expenditure. Therefore, genuine agility of an economic system in adjudicating potential conflicts between the environment and the economy requires not only the disposition to push back the former but also the disposition to restrain the latter. For all the credit the market system can take for the first, however, it has not proven competent in regard to the latter.

Defenders of the market would surely dispute this assessment, and they have long hailed the market's singular ability to shape demands in accordance with supply as well as the other way around. With respect to natural resources, the assurance can take the form of a statement such as "the world is unlikely to go *crashing full-speed into the wall* of resource depletion or environmental collapse without warning from the price system something is going terribly wrong (emphasis mine)".[153] But this hardly inspires confidence, not in those who know what societies really ought to worry about. First, protection against crashing full-speed into the wall of resource depletion and

[153] Quoted in Mackellar, F. Landis and David E. Horlacher. "Population, Living Standards and Sustainability: An Economic View," in *Beyond the Numbers: A Reader on Population, Consumption and the Environment*, edited by Laurie Ann Mazur, Washington D.C: Island Press, 1994, 83.

environmental collapse is an excellent thing, but it is not the same as protection against resource depletion and environmental collapse in a less spectacular fashion. So even if the market is smart and savvy enough for the first, we would presumably expect more of it, that it be wise and fair enough to ease the society into a steady-state economy and to do so in a way that equitably distributes the benefits and burdens.

Secondly, protection against depletion of *particular forms of resource* is not the same as protection against depletion of resources in general, or across the board. It is true that the market is demonstrably deft in switching societies from one resource to another, and another, and another, yet it has also been largely insensitive to general scarcity that requires checking the overall rate of economic expansion. The prospect of escalating water problems as many societies now increasingly try to turn to biofuels in order to be weaned of dependency on fossil fuel plainly illustrates the market's narrow-mindedness and short-sightedness. Where transformation in values, and wholesale restructuring of the economic system and the prevailing model of production are needed, it continues to offer *ad hoc* band-aid solutions.

Markets are institutions. Essentially, they are based on, consist in or otherwise involve voluntary exchange. Through such exchange, information about the supply and demand of particular things of value is communicated among individuals, which in turn shapes their respective incentive (and disincentive) for production and consumption. Systems of voluntary exchange come in different kinds, depending on the mode of exchange (with or without a neutral medium such as money), the number, size and identity of the participants, the intrinsic nature, and the property rights or ownership condition of the objects traded. Furthermore, since any economy at all must feature some

voluntary exchange, whether and to what extent an economy can be characterized as a market economy depends on whether this institution is a dominant role in it relative to alternative mechanisms for coordinating behavior and allocating resources.

For example, Adam Smith's market was made up of a large number of small and privately owned businesses who competed for consumers to whom they sell their products directly. This is very different from the kind of market we associate with giant corporations and conditions of oligopoly, or of monopoly, which thwart competition to varying degrees. When the relation between private production and private consumption, between buying and selling is mediated by or goes through a middleman, say, the government, we get an indirect kind of market subject to a considerable measure of centralized management and control. For the provision of many forms of public goods, among which undiminished carrying capacity of the environment in the long-term can be plausibly included, as well as the satisfaction of certain basic necessities, this kind of market afford them a greater measure of protection against the whims of private profit. Moreover, depending on the prevailing ownership condition of the means of production, we would have either (degrees of) capitalism or (degrees of) market socialism.[154]

Despite these variations, the notion of the market, and the market economy, is often narrowly associated with the free enterprise system, characterized by the private ownership of the means of production, or capital, open competition and decentralized decision-making by firms and consumers in matters relating to material production and consumption. This association undergirds the influential but flawed notion that the market and the government, especially that of the modern state, are genuinely alternative

[154] Julian le Grand and Saul Estrin, editors, *Market Socialism*, Clarendon Press, an Imprint of Oxford University Pres, 1989.

ways of organizing society rather than existentially interdependent and functionally complementary. With their vast arrays of laws and regulations, taxes and fees, quotas and tariffs, subsidies and public programs, governments in even the most nominally market-dominated and deregulated societies have their handprints all over the economy down to its last nook and cranny. Yet, widespread obliviousness and/or delusion about this fact, due as much as to ignorance as to propaganda, warrant calling the government "the *other* invisible hand", if we should accept the validity of the metaphor in the first place. Conversely, many nominal markets as we know them cannot have become what they are and could not have done what they have managed to do without significant and diverse modes of government involvement. They are, in this sense, fundamentally rigged markets. For example, given the sheer magnitude and lopsided nature of agriculture subsidy in the United States, the food industry is anything but a free and competitive market.

For my purposes here, there is another dimension to the same association that is of particular significance, which is that the notion that the market can bring about some particular socially desirable outcome, say, environmental sustainability, on its own either presupposes, or is really an expression of the belief that microeconomics is both conceptually and methodologically adequate for addressing the given problem, and that there is no need, or room, for a macroeconomic perspective or prescription.[155] Microeconomics, generally speaking, focuses on the "allocation problem", the problem of how firms and consumers, through voluntary and open bargaining, arrive at prices that are "efficient", i.e., maximize aggregate value. It is, therefore, believed to be concerned primarily with the workings of the stereotype of the market as substantially autonomous

[155] Herman E. Daly, *Beyond Growth: The Economics of Sustainable Development*, Boston, Beacon Press, 1996, ch. 2.

of government involvement. While this process does tend to achieve greater efficiency in allocation than alternatives, it fails consistently by two other criteria: fairness in distribution and optimality in aggregate scale. Macroeconomics, generally speaking, focuses on the second of these (while the first of these might be best thought to be addressed outside of economics altogether, in social philosophy and ethics), including such issues as aggregate demand, unemployment and inflation, areas in which many economists concede the market can fall considerably short of delivering optimal outcomes. To the extent the government is believe to play a critical role in the economy with regard to these issues, it is studied more openly and extensively in macroeconomics and also features more prominently in theories of macroeconomics. (It is of course also of central concern to the study of justice in social philosophy and ethics.)

The difference between environmental microeconomics and environmental macroeconomics roughly tracks the same pattern. Environmental microeconomics is mainly concerned with how firms and consumers, the primary participants of "the market", can "get the price right" for both environmental goods such as resources and environmental bads such as pollution through bargaining and competition, quintessentially market processes. As such, it typically does not so much as broach the question of the "proper, [i.e., optimal,] scale of the macroeconomy relative to the ecosystem," which would be the main focus of an environmental macroeconomics, and whose solution would demand considerable government involvement.[156] That recognition for the need for an environmental macroeconomics is slow and uneven attests to the continuing sway of the belief among many economists that the question of optimal scale of the economy is not an economically interesting one. And this in turn helps to account

[156] Daly, 1996, 48.

for their dismissal of the need for government involvement specifically in promoting environmental sustainability, which is unavoidably, though not exclusively, an issue of scale. (It is also, of course, an issue of equity in how, at any given scale, the total benefits and burdens at are to be equitably distributed among claimants, for which the power of the government is also needed.)

The reason why the market in its allegedly "pure", i.e., laissez faire, form is inherently disposed to miss the mark of optimal scale relative to the ecosystem, and therefore cannot be depended on for delivering environmental sustainability, can be distilled into two main ones. One has to do with limitations to the kind of information in which firms and consumers tend to be interested and is communicated among them. The information conveyed by market prices reached through spontaneous mutual adjustment between supply and demand do not reflect the long-term impact of the economy as a whole on the overall condition of the ecosystem, especially insofar as the latter is seen not only as the "free gift" of nature but also as infinitely plastic, that is, a gift that keeps on giving. As such, this information can have but limited value towards efforts to manage that impact. The other problem with a laissez faire market has to do with limitations to the kind of incentive that prevails under this kind of economic condition. Private pursuit of self-interests by the individuals unburdened by any concern for the common good can and often does lead to suboptimal social outcomes. Therefore, an economic system deprives itself of the institutional instruments with which to correct deviations from socially optimal outcomes in as much as it imposes stricture upon legitimate interference in the pursuit of individual self-interest. Together, these two problems make environmentally sustainable use of environmental resources highly unlikely under the

somewhat fantastically “pure” form of the market. The solution to both must to varying degrees involve the government.

First, the government can play a considerable role (albeit not an exclusive one), if it so chooses, in the collection of information about the long-term anthropogenic impact of the macroeconomy on the ecosystem. More important than its ability to bring forth the resources to do this is the fact that it presumably has greater interest in investing in it than private parties might typically be expected to be because the government represents, at least nominally, and ideally, the general will of the society. However, what may be truly decisive about the government’s role in promoting environmental sustainability is what it can do to correct the biases inherent to private incentives, and thereby “compel socially desirable behavior” on the part of firms and consumers. Such intervention – what you call it is immaterial – helps to “get the price right” from the point of view of the larger society, that is, more right than it would be without the intervention. What government involvement aims to do, in a nutshell, is to forcibly internalize the social cost of private conduct into the actual cost of doing business. A good deal of this can be and often is done without threatening the prevailing private ownership structure of the economy (though of course it amounts to the curtailment of the free exercise of property rights). If anything, laws and regulation, taxes and fees presuppose a free enterprise system, since these are the very entities meant to be subject to them. And when and to the extent these interventions work, it is precisely because they realign corporate profitability with the promotion of the public good.

But the modes of government involvement in promoting the common good run the gamut. It can engineer the incentive for socially beneficial behavior on the part of

private entities by creating competitive markets *ex nihilo*. Consider the cap-and-trade scheme for reducing hazardous emission. Here the government sets the total number of pollution permits for the target pollutant by capping the aggregate emission, and private corporations can then buy and sell these permits on an open market. This is supposed to provide a financial incentive to cutting emission. Moreover, government's role in verification will also be crucial to the effectiveness of the cap-and-trade program.[157] There are two basic lessons to be learned from this kind of scheme. First, it confirms that not only does government involvement in environmental management not entail the replacement or displacement of either the existence or the operation of the market, to the contrary, it can be directly inspired by insights drawn from microeconomics, from marginalist analysis, and the law of supply and demand. Smart public policies are often modeled on the market. This lays bare the futility of asking whether the market or the government alone can achieve environmental sustainability or any other optimal social outcomes. (And it would be similarly futile to ask which is to blame for adverse economic conditions. Markets can fail, and governments can certainly compound the failure by their own failure in trying to correct them. The reverse is just as true.[158])

Secondly, we also learn that one key role of the government is precisely to exert direct influence over the scale of the macroeconomy, something that firms and consumers are individually poorly informed, weakly motivated and ill equipped to do, even though they may be well-informed, strongly motivated and adequately equipped to do other things. In the end, of course, the level of tolerance for this role of the government, and

[157] T. H. Tietenberg, *Emissions Trading: Principles and Practice*, 2nd edition, Washington, DC: Resources for the Future, 2006, chs. 1-2.
[158] Clifford Winston, *Government Failure versus Market Failure; microeconomics Policy Research and government Performance*, Washington, D. C.: AEI-Brookings Joint Center for Regulatory Studies, 2006. Also see my interpretation of the concept of "market failure" in ch.6 (no. 44).

how far it might be strengthened, if at all, even in this new era of unprecedented global environmental crisis, are open political questions, to be settled through public discourse and democratic processes, at both the domestic and the international levels.

To conclude, it is true that the market plays a large role both in encouraging technological innovations and in adjusting society's demand for particular forms of environmental resources. However, given the inherent heteronomy of the market system relative to the government, the statement is also vacuously true, in the sense that it masks greater and more complicated truths, and it certainly does not say that the market can pull these off entirely without government involvement. I have in this last section tried to highlight two of these greater and more complicated truths. One is that however deft and competent the market might be, ultimately it cannot defy the laws of nature to make unlimited economic growth possible in an ecologically finite world. Secondly, how deftly and competently the market can play *its* role in promoting environmental sustainability is largely contingent on how deftly and competently the government can play *its* role in either cajoling or coercing firms and consumers into self-interested behaviors whose aggregate outcomes are socially beneficial.

Ch. 6 Distributive Environmental Justice in a Finite World

6.1 Environmental saving for the future

In this chapter I sketch an outline for a theory of distributive environmental justice, that is, a theory of distributive justice with respect to the use of environmental "goods" such as natural resources, ecological services and functions, and freedom from environmental "bad" such as environmental pollution, and arguably, resource shortage. The basic issue of intertemporal environmental distributive justice concerns (1) the just rate of saving of and investment in environmental goods, and (2) prevention of environmental bads, for the future. The basic issue of intragenerational environmental distributive justice concerns (1) the just allocation of current allowance of environmental goods and bads, and (2) the burden of saving for and investing in the future. One of the most important theoretical questions about environmental distributive justice, therefore, will concern the integration of these different issues into a coherent, and comprehensive – at least with respect to scope – account.

Intragenerational distribution in general – both domestic and global – has arguably been more intensively studied and written about than intergenerational distribution. Indeed, rough contemporaneity of claimants tends to be the default assumption of writings on distributive justice. The challenge raised by explicitly extending distributive concerns to future generations consists in not just the fact that generational cohorts are collective claimants – and perhaps a special kind thereof – as opposed to individual claimants of distributive justice, but also in the fact that both the size, the total number and membership details of future populations are unknown (and possibly unknowable) variables. From a purely technical point of view, these epistemic

limitations alone, that is, even without being compounded by our epistemic limitations with respect to ecology and technology, imply (in the spirit of Aristotelian contextualism) that intertemporal distributive principles are unlikely to achieve the level of precision or determinacy that may be possible for principles of intragenerational distributive justice.

These obvious and somewhat intractable epistemic and related conceptual problems notwithstanding, it is nonetheless possible to encapsulate the basic intuition about the core requirement of intergenerational distributive justice with the following dictum: that each generation must leave, i.e., save for, posterity with enough and as good of something, provided it is able to do so. The terminological coincidence with Locke's Second Proviso, the "sharing clause", is unintentional. In its essentially truncated form, and shorn of its Lockean associations and/or connotations, the phrase "enough and as good" aptly if also inadvertently captures both the idea of sufficiency, which speaks to the quantitative aspect of the saving requirement, and that of functionality, which speaks to the qualitative aspect of the saving requirement.

Any particular application of the eponymous principle must be based on answers to three questions: (1) enough and as good *for whom*; (2) enough and as good *of what* (3) enough and as good *for what end*. In the context of intergenerational environmental distributive justice, each generation is to leave future generations (answer to question 1), as a matter of justice, natural resources (broadly construed), and certain ecological conditions (answer to question 2). These are, of course, only the beginning of any adequate answers to these two questions, and by no means the end of them. For example, how many generations must be considered? While a precise answer may not be forthcoming, we can rule out extremes. One extreme treats of the current generation as if

it was the penultimate one in the lifespan of a society, the other would require of the current generation to concern itself with the interests of an infinitely large number of future generations. Some philosophers have, quite sensibly, taken a cue from Native Americans' practice of considering the interest of seven generations into the future.[159] If we assume 30 years per generation, that would really require of us to think for the next 200 years, which, even on the historical scale, cannot be said to be an astronomically large number.

The above answer to the second question also begets more questions, among which the third question listed above may in fact be the most important: the very act of naming the things to be saved already presupposes, and can only be justified by reference to, some beliefs about the thing(s) named, including, but not limited to, beliefs about the value of the ends for whose realization they can be instrumental. It is an elementary point that the "what" and the "why" are conceptually and inextricably linked with each other. So far as natural resource and ecological conditions are concerned, how much is enough and how good is good enough depends on not just what humanity depends on the natural environment for but also the scope for the duty of justice towards (seven generations of) future generations. So while it is clear enough that humanity depends on the ecosystem for biological survival, spiritual fulfillment and cultural development, it is not at the same time clear how to adjudicate or otherwise order these different types of interests so far as environmental justice towards future generation is concerned.

The issue of how much weight to assign the different kinds of interest future generations will have in the environment is key to not just the interpretation but also,

[159] Lisa H. Newton, *Ethics and Sustainability: Sustainable Development and the Moral Life* (Prentice Hall, 2002), 1.

perhaps more importantly, the operationalization, of the "enough and as good" principle of environmental saving. Presumably, what is enough for the purpose of meeting basic (material) needs would not be enough for meeting non-basic as well as basic needs, and still less so for meeting wants as well as needs. The same is true of qualitative assessment: conditions good enough for building shopping malls would not be good enough as either a park, a wildlife sanctuary or a wilderness retreat. Roughly speaking, the more basic needs are those interests of future people to be considered by the living ones from the point of view of justice, and the more simply they are satisfied, the less demanding would be the saving requirement and the more latitude for current consumption and usage.

Neither the extreme of aggressive saving that imposes extraordinary and unnecessary hardship on the currently living, nor that of zero or negative saving (when this is not necessary to meet the non-savers' own basic needs) that exposes posterity to the risk of deprivation and the hardship it entails, has any *prima facie* plausibility as a requirement of intergenerational distributive *justice*. Both of them flagrantly run afoul of the principle of impartiality as a core requirement of justice: extreme saving unfairly favors future generations and shortchanges the currently living while unrestrained current consumption indulges in the pursuit of short-term interests at the expense of those of future generations.[160]

Contractarian thinking can be, given the high premium it places on the principle of impartiality and fundamental equality, especially pertinent for the task of finding the

[160] The second of these unjust scenarios, that of insufficient saving for the future, is to be distinguished from the problem of future discounting. Future discounting is a problem about the determination of expected future value on the basis of present value according to certain discount schedule. By contrast, the unjust present-future partiality characteristic of unrestrained current consumption is a problem about how expected future value – however it is calculated, that is, at whatever discount rate – is weighed against present value.

mean, as it were, between these two extremes. The basic idea, as exemplified by the way in which Rawls, for example, treats of the justification for the savings principle, is that impartial contractors, ignorant about, among many other things about themselves, the generation to which they belong, would agree to whatever savings principles which they would reasonably want preceding generations to have followed.[161] This is at its core a variant of the familiar Kantian notion of justification-via-universalization: each generation is to bind itself on account of the interests of posterity in a way consistent with the way in which it would want preceding generations to have bound themselves on its account. However, since it is the nature of contractarian thinking to impose certain *methodological* or *procedural* constraints of rationality on practical reasoning, it underdetermines the substantive *material content* of the outcome, which also depends on the substantive values used as independent variables in the construction of norm.[162] So whatever value contractarian thinking has for eliminating both extreme saving and zero saving (or even deficit spending), it still leaves it somewhat open as to which interests (of posterity) ought to constitute the reference by which the just rate of savings is determined.

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[161] John Rawls, *A Theory of Justice* (Cambridge, MA: The Belknap Press of Harvard University Press, 1971), 284-93.

[162] It is commonplace for liberal theorists to put the point in terms of what people would or would not complain about. This practice presupposes that complaint is in some sense the logical opposite of consent, which is the cornerstone concept of contractarianism. But it is possible to be too quick in treating consent and complaint as mutually exclusive, bivalent, categories like those of assertion and denial. In "Ethical Consistency," (in *Essays on Moral Realism*, edited by Jeoffrey Sayre-McCord, Ithaca, NY: Cornell University Press, 1988) Bernard Williams has argued that unlike situations of conflicting beliefs, wherein (1) the discovery that two beliefs cannot both be true is reason enough to abandon one of them, and (2) the abandoned belief ceases to have a cognitive grip on the agent, in situations of conflicting desires, (a) the discovery that two desires cannot both be satisfied usually does not straightaway eliminate one from the incompossible set, and (b) an unsatisfied desire often does not just go away but can retain its psychological grip on the agent by "reappear[ing] in the form of a *regret* for what was missed (original emphasis)" (44). If "consent" and "complaint" are closer to desires than to beliefs – which seems possible – then "consent, albeit with complaint" would not be an incoherent concept (implying that it may be possible for us to consent to some principle without also consenting not to complain, at least on occasion, about the consequence for ourselves of its application). This complicates the contractarian approach to practical reasoning.

6.2 Interpretations of the "Non-declining" Just Savings Principle

On this substantive question, it is widely agreed that intergenerational justice requires that among the following candidates – welfare, utility, opportunity, (range of) options, possibilities, wherewithal, resources – something or other not be allowed to decline or diminish over time. All varieties of the "no-decline" criterion, as we might call it, face the basic difficulty of justification.[163] Wilfred Beckerman, for example, has challenged this criterion. While he directs his criticisms specifically at the non-declining *welfare* criterion of intergenerational equity (which he associated, perhaps unfairly, with the notion of sustainable development, of which he is famously critical),[164] I believe the same criticisms apply, in the main, also to the non-declining utility, non-declining opportunity, non-declining (range of) options, non-declining possibilities, non-declining wherewithal, non-declining resources criteria of intergenerational equity. "It is difficult to see," Beckerman writes, "why one should attach crucial normative significance to the current level of welfare. It cannot be argued that, by some extraordinary coincidence, that present average standard of living constitutes some minimum subsistence level below which future generations must not be allowed to fall."[165] The suggestion is that since "current" is an indexical, a nonrigid designator, that is, it changes from moment to moment, it must be an arbitrary base for comparison. A criterion defined by reference to some kind of substantive baseline would, by contrast, be non-arbitrary, and therefore, morally more justifiable.

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[163] This justificatory question should be distinguished from the empirical question of what we would like or prefer and why.

[164] See, for example, Beckerman's *Small is Stupid: Blowing the Whistle on the Greens* (London: Duckworth ,1995), 126-7, and *A Poverty of Reason: Sustainable Development and Economic Growth* (Oakland, CA: Independent Institute, 2001).

[165] Wilfred Beckerman, "Sustainability and Intergenerational Equity," in *Fairness and Futurity: Essays on Environmental Sustainability and Social Justice*, ed. Andrew Dobson (Oxford: Oxford University Press, 1999), 73.

There is something fundamentally right in Beckerman's contention, the core of which is the insight that the facts that obtain at any moment (say, the level of welfare), are in some deep sense arbitrary because they are to a considerable extent the cumulative effects of historical accidents (which may themselves be good, bad, or neutral). If we are considering the welfare trajectory covering the entire span of the history of a society from some transcendental perspective, it is not obvious why periodic decline in welfare, provided it does not dip below some baseline, must be incompatible with intertemporal distributive justice. At least, it does not seem quite right to say that it matters *not at all*, to the question of justice, what the absolute level of material welfare is from which a dip might occur. The general obligation of justice to ensure that welfare does not decline from the current level, regardless of where or what that level is, is either non-existent or poorly justified. Generally speaking, people naturally (but perhaps also learn to) prefer getting to losing, having more to having less, having more than others to having less than others, but it does not follow from this that when our preferences are not satisfied injustice has been committed.

A non-utilitarian would resist Beckerman's conclusion by rejecting the (quintessentially utilitarian) premise that the transcendental perspective is the one that should be assumed by each generation as it tries to consider what its own responsibilities are towards (at least) immediate successors (or seven generations thereof). Brian Barry, for example, has defended the no-declining natural resource criterion for intergenerational distributive justice on the basis of a "principle of responsibility". According to this principle, "a legitimate origin of different outcome for different people

is that they made different voluntary choices"[166]. Since "people in the future can scarcely be held responsible for the physical conditions they inherit," applying this principle to future generation yields the judgment that "it is unjust if people in future are worse in this respect than we are."[167] Here the indexical "we" designates, nonrigidly, each generation that deliberates anew. In response to Beckerman's charge of the arbitrariness in taking the present condition as the baseline, Barry writes that "[t]aking the present as our reference point is arbitrary only in some cosmic sense in which it might be said to be arbitrary that now is now and not some other time").[168] If the year 1998 is no more or less arbitrary from the point of view of 1998 than 2099 is from the point of view of 2099, then, according to Barry, the charge of arbitrariness such as that made by Beckerman has no meaning, or least no normative import.

While I find Barry's application of the principle of responsibility to the intergenerational dimension intuitively appealing, I am not convinced that it suffices to justify or validate the no-decline criterion for intergenerational distributive justice. I think Barry may have misinterpreted Beckerman's criticism of the no-decline criterion. Barry is right that any agent deliberating in real time cannot treat her own temporal location, cosmically contingent and arbitrary as it may (or "must"?) be, as carrying no significance from her subjective point of view.[169] There is no inconsistency, as Thomas Nagel, among others, has argued, between seeing our individual, or even collective existence as fundamentally arbitrary and perhaps meaningless *from the outside* and taking ourselves

[166] Brian Barry, in Dobson (ed.), 1999, 97.
[167] Brian Barry, in Dobson (ed.), 1999, 98.
[168] Brian Barry, in Dobson (ed.), 1999, 107.
[169] Though it is still open to question as to whether this is of normative or psychological significance.

seriously *from the inside*.[170] This elementary point is unlikely to have been lost on Beckerman, who would, for that reason, probably not object to this somewhat trivial sense of "starting from now". The problem, however, is that "starting from now" is an ambiguous phrase that can also have a *non-trivial* meaning which assumes that what(ever) is true at the time of an agent's deliberation and/or existence of the human condition is the norm, not just for that time, but period, as it were. Beckerman's objection to the idea of "starting from now" is not directed at its trivial construal, the one on which it is about time as such, but at its non-trivial construal on which it is about, in this case, the level of material welfare.[171] If there is a level below which no generation should be allowed to fall, specifically as a matter of intergenerational justice, that level should not be fixed solely by either some nonrigid designator such as "now" or even rigid designator such as "1998", but rather by some definite and substantive description of the kind of human life that is possible at that level.

An alternative to formulating the "no-decline" criterion for intergenerational distributive justice in terms either of welfare output or of material input from which welfare output could be generated would be in terms of the number of options available to future generations, that is, their "range of choices and opportunities to pursue certain valued interests and activities."[172] In this vein, the legal scholar Edith Brown Weiss, for example, has proposed the following three principles of intergenerational equity: (1) the conservation of options ("available to future generations in solving their problems and

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[170] Thomas Nagel, "The Meaning of Life," in *What Does it All Mean: A Very Short Introduction to Philosophy* (New York: Oxford University Press, 1987), 95-100.
[171] So it is a Non Sequitur to point out that we cannot go back in time to correct the levels of welfare in the past. Time's Arrow is a sui generis phenomenon that admits of no equivalence in the area of, say, the historical changes in material wealth.
[172] Norton, in Dobson 1999, 133-4.

satisfying their values"); (2) the conservation of quality (of planetary conditions) and (3) the conservation of access ("to the legacy of past generations").[173] This is, on the face of it, a rather compelling idea, especially given the hold the lofty idea of "equality of opportunity" has taken in liberal democratic societies. However, the devil is in the details: the operationalizability, and the operationalization, of principles framed in terms of the concept of opportunity and option depend not just on how we understand these notions, how we individuate, count and measure them, but also ultimately on just what sorts of problems we figure future generations will need to solve and what values we figure they will (or should) want to satisfy. The value of all of these variables is contingent and quite fluid.

To illustrate these complexities, I want to examine closely Bryan Norton's defense of a version of the "option-preservation" interpretation of the "no-decline" view. According to his argument, people can be harmed in different ways: they can be harmed if their material interests are set back, but they can also be harmed if their non-material interests are set back, yet when they are harmed in the second kind of way, they are somehow, (and somewhat confusedly), worse-off without being less well-off. The type of non-material interest that Norton is particularly concerned to defend, in the context of environmental sustainability, is the availability of such opportunities as that to experience directly pristine landscapes. Norton writes:

> "[S]uppose our generation convert all wilderness areas and natural communities into productive mines, farmland, production forests, or shopping centres… and we do so efficiently…leaving the future far more

[173] Edith Brown Weiss, "Our Rights and Obligations to Future Generations for the Environment," in *The American Journal of International Law*, Vol. 84, No. 1, Jan., 1990, 198-207.

> wealthy than we are. Does it not make sense to claim that, in doing so, we have harmed future people, *not economically*, but in the sense that we seriously and irreversibly narrowed their range of choices and experiences? A whole range of human experience would have been obliterated; the future will have been – *at least given the values of many environmentalists* - impoverished (emphases mine)."[174]

Three comments are in order. First, Norton has, not unlike Mark Sagoff and Elizabeth Anderson, whose views about welfare I scrutinized in chapter 4, built a materialistic bias into the very notion of *economic* welfare and wealth (the latter of which is typically used as abbreviation for "money/material wealth"). Assuming this bias, it is a mere tautology to say that people who are (assumed to be) wealthier are not harmed economically, which is to say nothing more or less than that wealthier people are wealthier, or, what is the same, that people who are benefitted economically are not harmed economically. Interestingly, or perhaps paradoxically, Norton has no problem deploying the notion of "impoverish" (which he does *not* enclose in quotation marks)[175] at the end of this passage, despite, or perhaps precisely because of its ambiguity between the materialistic/monetary and the non-materialistic/non-monetary construals. But if "impoverish" can be used in a way apparently unencumbered by any materialistic bias, I see no good reason why the same cannot be true of "welfare" and "wealth(y)".[176] If we don't let the economists "have" the concept of impoverishment, why do we let them

[174] Bryan Norton "Ecology and Opportunity: Intergenerational Equity and Sustainable Options," in Dobson 1999, 132.
[175] Nor do I suggest that Norton should have enclosed the term in quotation marks. After all, we already routinely use constructions such as "intellectually/emotionally impoverished".
[176] Nobody thinks "wealth of knowledge/information" is a nonsense phrase, because it is not.

"have" those of wealth and welfare? After all, they get to have them (i.e., define them on their own terms) only if we let them. We should not.

Secondly, even if we grant, trivially, that by obliterating all natural landscapes we do not necessarily harm people economically, it nonetheless does not follow, or cannot simply be assumed, that it harms them at all. It cannot be the case that *any* "serious and irreversible narrowing of range of choices and experiences" constitutes harm. It depends on the substance of the choice or the experience: loss of the opportunity to practice human sacrifice does not harm, economically or otherwise. Norton apparently accepts this, which is most probably why he feels it necessary to qualify his claim by including the clause "at least given the values of many environmentalists". But the qualification raises two difficulties, one semantic or terminological, and the other substantive. The semantic problem is that it is not determinate or clear who is supposed to make the cut for the label "environmentalist". If it applies to anybody who "cares about" the environment, it masks important distinctions between different reasons for one's caring, distinctions with which much of environmental philosophy is preoccupied. If, alternatively, an environmentalist is somebody who cares about the environment for its own sake, entirely independent of any reference to human interests, it is not clear that one (such as Norton) who holds that environmental degradation leads to *human* impoverishment would not be mislabeled as one. On this more restricted, or "purist" interpretation, no one who is a utilitarian about environmental protection can be called an environmentalist, which seems gratuitously exclusionary if not also strategically counterproductive. The upshot is that Norton's casual use of concept of "environmentalist", as almost a throwaway line, does nothing (except perhaps in a fallacious manner) to help advance his argument.

The substantive issue with the qualification is simply that it is not clear why it does what Norton apparently believes it can do or should do, namely, ground general claims about the well-being of a society as a whole. Norton allows that there will be at least two types of future people: those who, because they "lack[] an opportunity to develop a 'wilderness sensibility', simply do not miss it,"[177] and the so-called "wilderness enthusiasts", who "retain their love of wilderness" and who "insist that they have been materially and spiritually impaired by our economic choices". Somewhat puzzlingly, he goes on to say that "[h]aving noted these cases, it is still reasonable to say, whether they recognize their loss or not, future people who are deprived of the opportunity to experience wilderness are simply worse off than they would have been if that option had been held open."[178] But clearly, the wilderness-deprived are either impoverished "given the values of many environmentalists" or they are "simply" worse off, but not both. In other words, it is either an objective fact that they are or not.

Of course, Norton might defend the authoritativeness and objective validity of the value of the enviornmentalists along the following lines: in dismissing the obliviousness of non-wilderness enthusiasts as sufficient ground for refraining from attributing harm to them, Norton might have intended to imply that the *only reason* they are oblivious is that they have not been exposed to the wilderness experience. Had they had that exposure, they too would become wilderness enthusiasts (or environmentalists?) themselves and would not only recognize their loss but regret it. Therefore, even though the values and tastes of the environmentalists (or wilderness enthusiasts) are not *in fact* universally

[177] Norton, in Dobson 1999, 133. He goes on to say that "in this case, they will not feel their loss of this whole range of experience, or at least they will not regret it, finding adequate fulfillment in human – dominated landscapes."
[178] Norton, in Dobson 1999, 133-4.

shared, they nonetheless *would be* universally shared if only all were properly epistemically and experientially situated.

But I don't believe this defense is successful. When J. S. Mill tried to defend the idea that intellectual pleasures are preferable to bodily ones by appeal to the judgment of the "competent" judge – one who has experienced both – he is, in my view, confusing an *a posteriori* question with an *a priori* one. While Mill clearly intends his conclusions about the relative merit and worth of the different pleasures to be objectivist, that is, to carry the kind of certitude and necessity typically associated with perfectionist theses about well-being and happiness, the inference by which they are arrived at are inductive, and as such honors his empiricism, in the sense that the premises are what people (albeit a special category thereof) actually think and feel. But how can or do we go from contingent premises to necessary conclusions? Mill's solution to this (in large part) lies in his specification of the kind of people whose feelings, experiences and thoughts are to count for the purpose of fixing the standard. Not anybody's feelings, experiences and thoughts are to count, but only those who qualify as experts, or competent judges, because they have experienced, without prejudice, all the different kinds of activities to be rated for their utility potential.

But is Mill's sense of certainty that the experts would *necessarily* arrive at a uniform judgment in matters of well-being and happiness well-founded? Is it truly unimaginable for somebody who has had the required range of experience and commitment to impartiality to prefer certain kinds of bodily pleasures to certain types of mental ones, and artificial environments to natural ones? I would submit that it is

certainly not unimaginable.[179] However, if we treat this as an empirical question, then we should only settle with an empirical answer, one based on evidence. But I am not convinced that this is how Mill himself might have treated the question, who would likely have resorted to preempting the possibility that a particular expert's judgment might be at variance with Mill's substantive conclusion by disqualifying anyone who issue an anomalous judgment as an expert. After all, the question of just who is or is not "competently acquainted" with different kinds of experiences is itself a loaded one, if for no other reason than that "competency" is a normative concept.

The distinction on which the difficulty of deciding who is genuinely competently acquainted with something turns is that between doing something and doing something *right*. It is not uncommon for us to try to explain how it is others do not share our own preferences with regarded to something that they simply haven't "done it right," implying that it they had, they would (probably) acquire the same preferences. Now the question becomes just what "competency" involves: merely doing/experiencing something, or doing/experiencing something right (or in the right way)? If the former, then any way of doing/experiencing something is as normatively valid as any other, and there is no intelligible distinction between doing/experiencing something right and doing/experiencing the same thing wrongly. By contrast, if "competency" presupposes doing/experiencing something *in the right way*, then we need an account of what makes a way a right way and another wrong.[180] Otherwise, we would have no way of preventing

[179] It is most likely empirically false that every kid who has been exposed to both computer games and running around in the woods would prefer the latter. And it is dishonest to treat this as a case of false-consciousness as opposed to a genuine challenge to the perfectionist thesis.

[180] It is common enough to hear it said that people who do not like a particular subject, say, mathematics or the sciences or literature or whatnot had bad teachers who were unable to give them the proper initiation and to get them interested. This seems to suggest that Mill may have been operating with an overly simplistic notion of what it means or is to experience something.

the arbitrary engineering of agreement among the experts by way of an arbitrary criterion for qualifying as an expert. Obviously, the danger of understanding "competency" in terms of doing/experiencing something right is that we might end up begging the question about what the judgment of the expert ought to be by illicitly building our a priori conception of it directly into our account of in what the rightness of the right way of doing/experiencing something consists, and therefore, our criterion for who makes the cut for being called a competent judge at all.

A third point regarding Norton's argument about the harm from opportunity loss is this: if what we do can lead to such consequence for future people where they are, as he claims, *at once* "far more wealthy than we are" (because their material interests are furthered) and "simply worse off" (because their non-material ones are frustrated), then without a meta-criterion for weighing the relative worth of the two kinds of interests, and the relative worth of their satisfaction, *nothing* logically follows as to whether wrong (i.e., injustice) has been done to them because nothing logically follows as to whether there has been decline in their well-being, all things considered. If, as Norton seems to imply, some loss of material wealth can in fact be good for the individual insofar as the loss is more than fully compensated for by advances in their non-material interests (at least those they would have under ideal epistemic conditions), then we have to have some way of determining how the trade-off works.[181]

Now I am not arguing that it is not wrong for us to "convert all wilderness areas and natural communities into productive mines, farmland, production forests, or shopping centres", even if we can do so efficiently (which presumably means "sustainably"). Nor

[181] People who leave their homeland in pursuit of economic opportunities and the better material life they entail often endure emotional hardship by leaving behind their social network. But we say (because they themselves do) that, at least for most of them, *on the whole*, their new life is *better than* their old one.

am I arguing that we could not cast the wrongness of it in terms of harm to human beings. What I am arguing is that *if we should choose to do so*, there is no reason why we could not or should not conceptualize the opportunity loss, on the basis of which harm is attributed, as either directly or indirectly welfare-reducing (where "welfare" is understood holistically, shorn of any crass materialistic bias), that is, in broadly utilitarian terms.[182] Conceiving these opportunities as welfare-consequential allows us to speak meaningfully about whether their loss is or is not compensated for, and the degree to which it is neutralized by gains in welfare or utility from other sources (sources, that is, having to do with alternative ways of relating to the environment). This would then in turn make it possible for us to say more than that the future people in Norton's scenario are *at once* "more wealthy than we are" and "impoverished" and "simply worse off", but also that they are, *all things considered* (or *on the whole*) either better or worse off than people with some alternative welfare composition profile (or opportunity bundle). However, we are not able to make this judgment about the future people in Norton's scenario as they compare to their predecessors because of insufficient information, not just about these future people's preferences, tastes and values, but also – perhaps more importantly – about their predecessors' precise welfare composition profile against which that of future people are compared. What we can say, however, is that it must matter greatly whether the comparison is with a baseline that features material abundance (say, of the sort that members of the global consumer class take utterly for granted)[183] or one that features grinding poverty (which describes the condition of a vast number of

[182] Norton's insistence otherwise is really self-defeating since it is difficult to interpret the notion of being "worse-off" in any way other than a reduction in welfare.
[183] Alan Thein Durning, *How Much is Enough?: The Consumer Society and the Future of the Earth* (New York: W. W. Norton, 1992).

humankind today), whatever may be true of the opportunity for the non-material enjoyment of nature.

Alternatively, if we insist that the kind of nature-related opportunities and options Norton draws attention to simply cannot be accommodated within a utilitarian framework, then we should altogether dispense with the language of harm (and cognates such as "impoverishment" and "worse-off') in characterizing the nature of the wrongness of wholesale environmental destruction (beyond what is needed for human survival) that leads to this kind of opportunity loss (but otherwise poses no threat to the continuing supply of critical natural capital). There is no conceptual difficulty in saying that an act is wrong even if it harms no one (it is anyway philosophical commonplace that harming somebody is but one way in which an act can be morally wrong, "victimless crimes" need not be a contradiction in terms). So we can still condemn wholesale destruction of pristine landscape, but on grounds other than its harmful effects on future people. Instead, the wrongness would consist in the destruction of something intrinsically valuable (say, the integrity of nature), completely independently of any reference to human interests and desires.

6.3 A Matter of Priority: Integrating Just Savings with Intragenerational Justice

Consistent with the anthropocentric orientation of my understanding of environmental justice and environmental sustainability, in conjunction with my desire to unburden the concepts of "welfare" and "wealth" of the connotation of materialism (and to thereby reclaim them from economics), I am in favor of a conception of the criterion for intergenerational environmental distributive justice that takes seriously into

consideration the non-material contribution nature can make towards human welfare. This obviously raises the question of priority among the different sources of welfare, at least insofar as their implications for environmental use and bequest are concerned. Acceding that the opportunity to enjoy wilderness may well be integral to certain conceptions of the good life, does not mean that even on those conceptions the opportunity for wilderness enjoyment would claim priority over other welfare-generating uses of the environment. In the end, and in the large scheme of things (which is the only scheme becoming to the current discussion), basic human needs must claim priority, not only over mere wants, but also over non-basic needs.

Some clarifications are in order as to just what kind of a principle this principle is of prioritizing basic needs over other interests. In the taxonomy of principles, there are genus and species. What I am in particular concerned with here is the sense in which the principle of prioritizing basic needs over other interests may or may not be plausibly regarded as a species of the genus of the principles of equality. The name is immaterial, it is the substance of the principle that matters. As Amartya Sen has noted, powerfully and I believe correctly, "[w]e cannot begin to defend or criticize equality without knowing what on earth we are talking about, i.e. equality of what features…"[184] The notion of equality, Sen shows, is so protean that most every ethical theory can be interpreted in a way according to which it contains a principle of equality, *of something or other*. Utilitarianism, for example, for all its reputation as an ethical theory oblivious to distributive concerns, must nonetheless be said to demand "equal treatment of human beings in the space of *gains and losses of utilities*. (original emphasis)"[185] For its part,

[184] Amartya Sen, *Inequality Reexamined* (Harvard University Press, 1995), 12.
[185] Sen, 1995, 13.

libertarianism must be interpreted as "demand[ing]…important features of 'equal liberty'…equal immunity from interference by others."[186] The key insight of Sen's (meta-) analysis is to highlight the significance of the idea of the "space" or the "field of application" of (the principle of) equality.[187] Once we acknowledge this fundamental point of the differential applicability of the principle (and more basically, the notion itself), we must concede that a chief preoccupation for those who study it ought to be the determination of which spaces are central or "basal" (that is, more important from some particular normative point of view) and which ones are "peripheral" (less important from the same point of view).

I suggest that one of the implications of Sen's argument for the current discussion is that it removes a conceptual obstacle to conceiving of the principle of prioritizing basic needs over other interests as a species of the genus of the principles of equality. Or, in Sen's phraseology, we might say that this principle seeks to secure equality specifically within the space defined by basic needs. What this principle specifically does not demand is equality within other spaces, such as that defined by material possession or money income. However, the fact that the "principle of equality in regard to basic needs" is not equivalent to the principle of equality in regard to total holding of all things valuable does not in itself contain clues about how much inequality in terms of total holding of all things valuable might result from or could be consistent with equality in terms of basic needs. I return to this question in the last section of this chapter.

The implication of this principle – by whatever name we might refer to it – for environmental sustainability is this: while the maintenance of "critical natural capital",

[186] Sen, 1995, 22.
[187] Sen, 1995, 22.

that is, those natural resources and ecological processes that are, as best as we can judge, given our epistemic limitations, the *sine qua non* for meeting basic human needs does not and should not exhaust the scope of environmental sustainability, it must nonetheless claim priority over the maintenance of other environmental features.

Now the critical natural capital conception of sustainability (which is essentially equivalent to the so-called "weak sustainability") has been criticized by many writers, including but by no means limited to philosophers, who are not economists by either training, or profession, ideology or sympathy.[188] But these criticisms, if and when well-defined, are either trivial or baseless. It is most likely trivially true, for instance, that sustaining only critical natural capital would be, generally speaking, less restrictive on environmental use, particularly for purposes of material production, than sustaining other environmental features as well as critical natural capital (the so-called "strong sustainability"). Whatever else that is conveyed by the labels "weak sustainability" and "strong sustainability", they convey the idea that one is *weaker than* the other.[189] But what follows from this? Being weaker in relative terms is not the same thing as being weak in absolute terms. This is anything but a novel idea. We know from commonsense that being better is not the same as being good, being bigger is not the same as being big, being older is not the same as being old, being thinner is not the same as being thin, being safer is not the same as being safe, being freer is not the same as being free, and so on and forth.

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[188] Andrew Dobson, *Justice and the Environment: Conceptions of Environmental Sustainability and Dimensions of Social Justice* (Oxford: Oxford University Press, 1998), chs. 2, 4 and 5.

[189] It may be more accurate to use the phrases "weaker sustainability" and "stronger sustainability", instead of "weak sustainability" and "strong sustainability". These replacements are bound to raise the question "than what?", precisely the question that must raised, and answered, if we are to truly understand what is at stake.

Of course, if it does not follow from the fact that weaker sustainability is weak, relative to some substantive criterion, nor does it follow that it is strong. Just what weak sustainability demands of us, in concrete terms is simply something that must be argued for independently, that is, on the basis of objective facts about ecology, on one hand, and of humanity, on the other. From a practical point of view, what we are concerned with is whether it is so weak and toothless as to permit the exploitative and destructive treatment of the environment currently prevalent in much of the world to remain largely unchallenged. Might it (not) permit, for example, the wholesale destruction of trees if it should turn out that plastic trees can "be as good as real ones," if they can someday "perform the same [critical] ecological functions as real ones"?[190] My contention is that the worry that the principle of weak(er) sustainability is so (absolutely) weak that it cannot support or justify injunction against resource depletion, ecological destruction, or unlimited economic growth, is based on the confusion about what is extrinsic and non-essential about the critical natural capital conception of environmental sustainability, and what is intrinsic and essential about it.

The two theses that are extraneous to the critical natural capital conception of environmental sustainability but that, because they have tended to be packaged together with it, mistakenly thought to be intrinsic to it, are the assumption of near-perfect substitutability between natural and human-made capital and the assumption of ecological infinitude. What the two assumptions have in common is that they are both based on technological optimism (see chapter 5), and herein lies the source of the mistaken belief about their relation with the critical natural capital (alone) conception of

[190] Peter Bartelmus, *Environment, Growth and Development: The Concepts and Strategies of Sustainable Development* (London: Routledge, 1994), 65, quote in Dobson, 1998, 41.

environmental sustainability. It is a fact that weak sustainability is popular among economists, and it is also a fact that economists tend to be technological optimists. However, it simply does not follow from the (contingent) conjunction of these facts that the critical natural capital conception of sustainability either contains among its core claims or is otherwise logically bound-up with and inseparable from any particular view about technology, about substitutability or about the limitlessness of nature generally. To hold that weak sustainability *in itself* must be guilty of what the wrong view about substitutability or about ecological plasticity is guilty of, is to commit at once the association fallacy (the lumping together of mutually independent theses) and the genetic fallacy (the lumping together of mutually independent theses on the basis of the fact that they are held by the same people). A proponent of weak sustainability may without contradiction be ecologically informed and realistic, and even humble about the power of technology to bend, stretch, or otherwise manipulate nature.

False beliefs about the limitlessness of technology account for but one way in which one can be wrong about the prospect for near-perfect substitution. Substitutability between *types* of things (as opposed to particular tokens of things) depends on three things. Firstly, it depends on whether it is technologically (or technically) possible to make the types functionally equivalent. For example, whether plastic trees can substitute, from an ecological point of view, for real ones depends on whether the former can be made to photosynthesize and whether forests of plastic trees can perform soil and water retaining, climate stabilizing, wildlife supporting and other ecological functions. Second, substitutability depends on practicability constraints such as financial feasibility. To the best of our knowledge, running and advancing modern civilization entirely on renewable

sources of energy such as hydrogen and solar power is not financially feasible, at least not for a very long time. Therefore, even if it is technologically possible for renewable sources of energy to substitute for non-renewable ones such as fossil fuels, this is still not practically possible in the immediate future.

But there is a third factor on which substitutability between two types of things depends: people's values, tastes and preferences. To somebody who values authenticity, a fake, no matter how "good", can never be a substitute for, i.e., have the same meaning or worth as the real thing. Whether forests of fake trees will be as good as forests of real trees will depend on what *exactly* it is about forests people who care about forests care about. For those who genuinely care about the authenticity (whatever that might mean) of the forest they might, say, take a walk in, plastic trees will never be an adequate substitute, even if they could perform the same ecological functions as real ones, and perhaps even be prettier than the real ones. This is an important point because it helps to remind us that resistance against the near-perfection substitution assumption is a multi-front struggle. It is not only about the supply side, as it were, of what is technologically and practically possible, but just importantly, it is about the demand side as well, that is, about what we want, desire and prefer, or more precisely, what we *should* want, desire and prefer. For if we can pass on to (or restore in, as may be the case) members of future generations an unyielding collective commitment to (and demand for) what is real and authentic about, in, and of nature, then that would to some degree render the question of what is technologically and practically possible (that is, what can be supplied) moot. A distaste for artificial simulacrum of nature would go considerable distance towards helping to protect nature from being wholesale substituted.

Let me resort to an analogy to make this point more vivid: whether the experiences generated by something like Nozick's experience machine can substitute for the real experiences depends not just on how real the virtual experiences feel but also on whether people would in fact use it because they decide that the two are indistinguishable in all ethically significant respects (or that the virtual experiences are preferable to the real ones).[191] Therefore, for those who are alarmed by the threat posed by such a machine to authentic living, they would be as well advised to endeavor to work on the demand side by inculcating in the public an aversion to the virtual as they would be to engage in sabotaging the supplying of it.

We cannot know for certain what value future generations will attach to authenticity when it comes to wilderness, or the length to which they would be willing to go to have the real thing, and indeed, we might be forgiven for being cautiously pessimistic.[192] This uncertainty has two implications. First, how true the near-perfect substitution assumption can be is as much a function of the reaches of technology as it is

[191] I might note, however, that the convention ethical questions raised by the experience machine are different from the question of whether virtual ecotourism of a kind that might, let us imagine, be made possible by experience machines that can generate wilderness experiences, might not actually be a boon for the environment. With such a machine, people would be able to satisfy their yearning for nature experiences without having to actually set foot in, and thereby risking perturbing natural landscapes.

[192] In most other areas, ranging from beauty to intelligence, history has witnessed the steady decline of authenticity's hold on us. Indeed, the very idea of authenticity has largely lost its sharp edges, so much so that a great deal of what is peddled as authentic today is probably just the opposite, namely, a carefully packaged commercial product the design of which has left nothing about its reception by and success among some intended audience to chance. Fake authenticity may be a contradiction in terms, but it is a genuine phenomenon. It is an assault on the intellect, the senses, and a blight of commercial society. Brian Barry may be right when he writes that something will have gone terribly wrong with the world if people prefer plastic trees and electric birds to real ones, but it is difficult to decide what to make of this worry. Every epoch has something terribly wrong about it, at least according to some of its internal critics. We already live in a world in which many prefer a stroll in a giant shopping arcade to a stroll in the woods, watching television to watching sunset, and still more happily acquire that preference. It smacks of idle wistfulness to be fighting for the preservation of things whose intended beneficiaries may not appreciate, or at least do so to the extent we might believe is proportionate to our zeal or effort. In many Chinese cities, ancient structures of cultural heritage values are summarily torn down, only to be replaced by gaudy fakes. While conservationists, scholars and the simply nostalgic ceaselessly decry this crime against culture and history, the young, the hip, and the foreign tourists leave little doubt that the fake can be just as profitably and happily consumed as what they are fakes of.

a function of the future trajectory of society's tastes and preferences in matters relating to the environment. We can imagine that had people been obstinately against, say, substitutes for real fur, real butter and real human-to-human relationships, the fact that faux fur and fake butter and simulations of real interpersonal relationship are technologically available would have not by itself been sufficient for effecting wholesale substitution at the societal scale. Second, just what the future trajectory of society's tastes and preferences in matters relating to the environment will be will not be determined by, but may be relatively independent of, whether we accept the near-perfect substitution assumption. If we believe either that the assumption is, or that it ought to be false, one of the more meaningful things to do is to pass onto future generations a healthy desire for what is genuinely natural, and of course, a healthy aversion to artificial imitations thereof. To the extent we succeed in this endeavor, the question of whether one day plastic trees will replace real ones will become moot.

Under the premise of ecological scarcity and finitude, weak (or "weaker") sustainability is strong enough to require the steady-state eventuality, wherein growth, rather than continuing on open-endedly, tapers off when per capita material wealth has reached a certain level, and the scale of the macroeconomy is (still) within the limits of the carrying capacity of the ecosystem coterminous with the economy in question. But even if one rejects the steady-state *eventuality*, due to, say, cautious optimism about long-term technological advancement, it still does not mean that there might not be good reasons for accepting a steady-state *interlude* scenario wherein a kind of moratorium is placed on economic growth when the environment is under acute stress, until such time when the stress has been relieved.

There is overwhelming empirical evidence that the time for a steady-state *interlude* is right about now.[193] Humanity has, as a matter of fact, already gravely impaired earth's life-supporting capability by threatening to deplete its supply of arable land, of fresh water and multitude of critical natural resources, to say nothing of our role in global climate change (which will unleash numerous untold changes to the earth's ecological conditions), and we are as of yet woefully behind on the search for, and the development and large-scale implementation of, the much-fancied and hyped-about technological innovations (the likes of plastic trees) that might (or not) in one way or another neutralize these damages. *At this time*, nothing less than aggressive resource conservation, pollution abatement and ecosystem preservation measures would be needed to achieve even the comparatively moderate ("light green") objective of sustaining (or perhaps restoring) critical natural capital. And at this time, these measures may well have the effect of s*lowing down, if not halting, the growth of the aggregate scale of the economy.* If we do not do this now, we might pass the point of no-return and it will then not matter much if theoretically unlimited economic growth (defined in and pursued in ways that have historically not been the case) and environmental sustainability are (that is, *could be/have been*) compatible.

The principle of prioritizing basic material needs over other grounds for staking claims upon finite environmental (or indeed any other kinds of) resources applies also to the distribution among rough contemporaries of current allowance (as constrained by the savings requirement) of environmental goods, of environmental bads, and, derivatively,

[193] According to Global Footprint Network, co-created by the economist Mathis Wackernagel (who coined the concept of ecological footprint), humanity as a whole is already living beyond its ecological means. "Globally", the website recently reported, "we now require the equivalent of 1.4 planets to support our lifestyles." This means that we are now already in the phase of "the ecological equivalent of deficit spending, utilizing resources at a rate faster than what the planet can regenerate in a calendar year."

of the *burden* of environmental saving. Conjoining the two normative premises – we ought to prioritize the basic material needs of future generations and that we ought to prioritize the basic material needs of the currently living – and the empirical premise of ecological finitude, it follows that what justice requires is each generation pursuing poverty alleviation and/or the sustained provision of the social minimum for all, in ways other than those that necessarily involve or otherwise require expanding the size of the proverbial economic pie. In other words, the application of the principle of priority on both the intragenerational and the intergenerational dimensions rules out *institutional, structural and/or ideological dependency* on *aggregate growth* as an (alleged) means for poverty alleviation. Insofar as certain configurations of social institutions and economic systems, such as the technology- and energy-intensive and profit-driven system of production, distribution and consumption in place in much of the world today, has the effect of institutionalizing this kind of dependency, it constitutes an institutional threat to environmental sustainability.

What integrated environmental distributive justice rejects is the sacrosanctity of the categorical imperative of growth-by-any-means-for-any-end. What it does not reject is growth-by-certain-means-for-certain-ends (and of course, up to a certain point). The negation of "must" is not "must not", but "not must", and that of "must try to achieve *x* by means of *y*" is not "must not try to achieve *x* by any means whatsoever", but "may try to achieve *x* in some other way". But this "demotion" of the imperative of growth from categorical to contingent status could not be more important. Within the context of any *set of* moral rules, it is those members that are considered categorical that function, *relative to other members*, as "side-constraints". A side-constraint constrains "on the

side", as it were, that is, it constrains how some other independent end can be pursued. A side-constraint derives its normative force (its "trumping power") from the *rigidity* or absoluteness of its underlying value.[194] The paradigmatic example of this kind of relationship between two moral values is that between individual rights and aggregate utility: we may seek to maximize the latter (as a moral goal), but only insofar as our means for doing so does not violate the first. If the imperative of growth is not categorical, it will be effectively stripped of its ability to constrain, i.e., impede or obstruct, the realization of other kinds of good and social values, including, of course, environmental sustainability and social justice. That, after all, is precisely where and how the goal of growth ought to be: humbled, but not outlawed.

Here and now in this world – at once economically lopsided, epidemically poor, and ecologically over-spent – poverty alleviation requires a multi-pronged approach: protecting the free access to such natural resource as land, water and forests from which many of the world's poor have traditionally derived their livelihood, increasing environmentally-sensitive economic production for internal consumption (as opposed to export) in regions where living standard is below or just above subsistence level, vast transfer – both domestically and internationally – of material wealth, money income, and technological know-how from the rich to the poor countries, and either active or passive reduction in per capita consumption of economic output and ecological resources among the rich so as to free up ecological space for the poor to consume more. Each of these approaches is individually necessary yet insufficient.

On the account I have just given, I was able to derive the *imperative* of wealth redistribution (on the intragenerational dimension) under the current global conditions,

[194] Robert Nozick, *Anarchy, State and Utopia* (New York: Basic Books, 1974), 153.

both social and ecological, without any direct reference to a prior *principle* of redistribution as a general distributive principle. Still, it needs to be asked whether such a principle must form part of any integrated theory of environmental distributive justice (or indeed, of any comprehensive theory of justice), and if so, how it might relate to the other parts of the theory. We must now turn to these important questions.

6.4 Redistribution

In the general discourse on distributive justice, especially within the context of intragenerationanl justice, the taking from some and giving to others (who are rough contemporaries or belong to significantly overlapping generations) – no matter the precise mechanism by which this is accomplished – is customarily characterized as *re*distribution. This concept, however, is both semantically ambiguous and ideologically loaded. If we take its prefix at face-value, indicating the doing *again* of something that has been done (at least once) before, then it accurately applies to most every imaginable form of transfer going on today anywhere and everywhere and any that will go on in the future. But this obviously empties the concept of any import. In the way it is most commonly used in current literature on distributive justice, the word is inseparable from the ideological baggage it carries, which it has acquired over the decades of debate about justice in distribution. It refers to any measure that is either designed to achieve or in fact has the effect of adjusting people's income from their normal participation (including the lack of income due to involuntary unemployment), in various capacities, in economic production. Moreover, while the conception of redistribution is inherently neutral

between different directions, much of the normative discourse concerns the legitimacy of taking from those with more and giving to those with less.[195]

I want to argue that what precise role *a principle of distribution* may play in a theory of distributive justice depends on (1) one's view about what it is a theory of justice is a theory of, (2) the type of theory of justice one favors, and (3) what *other* principles of justice one is willing to accept. Furthermore, whether redistributions required under current global conditions can be justified on the basis of a particular principle of redistribution depends not only on answers to these questions but also on what we understand, from a normative point of view, the nature of these redistributions to be. The discussion will proceed as follows. First, I consider the different places principles of redistribution might occupy, respectively, in the two basic types of theories of justice in the canon. The first includes theories of justice that are primarily historical and backward-looking in orientation and that are relatively indifferent to the pattern exemplified in the distributive outcome from moment to moment, and the second includes theories of justice that are primarily ahistorical and place a high premium on the instantiation of certain distribution patterns, particularly those characterized by limited inequality. Second, I compare and contrast the ways in which each of these two types of theories handles the call for redistribution under current global conditions. My contention is that while historical theories may be more suited for justifying current redistributions, this nonetheless does not entail that we must adopt a historical theory of justice for all

[195] Those who have vehemently opposed redistribution from the rich to the poor have not always similarly objected to redistribution in the other direction. In fact, economic policies that in fact have this second kind of redistributive outcome (such as many inspired by the so-called "supply side economics" and regressive tax laws) are typically not even acknowledged as redistributive, and are as such illicitly shielded from any criticism nominally directed at redistribution. But if one is not opposed to redistribution *per se*, but only to redistribution in a specific direction, they must be concerned more with protecting the interests of the beneficiary than with defending a particular distributive mechanism.

other purposes. The issue of redistribution, as such, may suggest a source of necessary incompleteness of both types of theories so far as their applicability in the real world is concerned.

Historical theories of justice tend to be marked for their indifference to issues of equality. By default, therefore, there is no place in them for principles of redistribution whose purpose it is to ameliorate inequality for the sake of ameliorating inequality. This does not mean, however, that no redistributive measures can ever be justified on the basis of historical principles. For example, the principle of rectification in Nozick's entitlement theory, whose purpose is not to maintain some particular pattern for its own sake but rather solely to right past injustices in acquisition and transfer (that is, injustices according to the other principles of the same theory).[196] Nozick writes:

> "In the absence of [a full treatment of the principle of rectification] to a particular society, one *cannot* use the [entitlement theory] to condemn any particular scheme of transfer payments, unless it is clear that no considerations of rectification of injustice could apply to justify it. Although to introduce socialism as the punishment for our sins would be to go too far, past injustices might be so great as to make necessary in the short run a more extensive state in order to rectify them (original emphasis)." [197]

Of course, whatever appeal and promise the principle of rectification has in theory, proper application of it in practice necessarily faces daunting and perhaps even insurmountable difficulties, both technical and ideological. Not only does it presuppose an understanding and interpretation of actual history that are as unbiased as is

[196] Nozick, 1974, 153, 231.
[197] Nozick, 1974, 231.

intellectually possible, which can be a challenge in its own right, just as importantly, given the magnitude of past injustices, compounded over the ages, it may not always be feasible to completely undo them even if we know what that would involve.

Now when we turn to the other type of theory of justice, which assumes the intrinsic moral value of restricted inequality, the issue becomes somewhat more complicated. In this context, there are two possibilities regarding the principle of redistribution. One involves the acceptance of such a principle *as well as* principles whose application tends to generate inequality. When a theory of justice features the conjunction of these two functionally distinct (and mutually complementary) sets of principles, it would imply a distributive system of which the creation and the taming of inequality are parallel processes, different aspects, or moments, of its *normal* functioning. Such a system features extensive liberty in economic activities conjoined with extensive redistributive measures supported by steep taxes. By contrast, we might opt for a theory that rejects both these kinds of principles and endorses instead principles whose application consistently and directly produces relatively equal distributive outcomes. Economic decision-making would be more centralized, allowing for more economic planning through industrial and economic policies, income would be more equally distributed and less steeply taxed than under the alternative system.

The choice between these two principle sets is, as would be immediately recognized, the subject of a host of familiar and ongoing debates. Obviously, one's position on the specific issues of redistribution will depend crucially on one's considered judgment about and/or preference between these two competing visions of a good and just society. But what does or should those depend on? If procedural freedom (freedom in

ownership, trade, production and consumption) and freedom from equalization measures (those primarily meant to benefit rough contemporaries) are the only two values bearing on the choice, given the necessary trade-off between them, it might ultimately be indeterminate, in the absence of another value, as to which of these two distributive systems and their underlying theories can claim superiority over the other.[198] Reasonable people of fundamentally different intuitions may simply disagree. However, these are *not* the only two values relevant to this question, the value of environmental sustainability in the long-term is in fact the third value that must be brought to bear. Why and how would consideration of this issue make a different in our calculus? As we saw in the previous chapter, environmental sustainability is to a large extent a matter of maintaining the optimal scale of the macroeconomy, which is importantly a function of the rates of economic growth. Therefore, insofar as the two sets of principles of distribution have not been formulated with either a keen awareness of or explicit reference to the special demands of distributive issues in relation to the environment (which is very much the case with most past debates about socialism and capitalism), the (relatively newly articulated) norm of environmental sustainability provides a somewhat independent criterion by which we can assess their relative merits. Specifically, it weighs in favor of those principles that entail a system with a relatively high level of tolerance for relatively low rates of expansion in aggregate scale, that is, a system that is structurally more congenial to the emergence and the maintenance of a steady-state economy.

[198] It may be of interest to note that the choice can be, perhaps suitably, particularly difficult for those who have had the fortune of experiencing life under both kinds of systems. It is common for many people who live in societies that recently underwent the transition from planned economy to a more market-based economy to feel torn about life before and after the collapse of the old system. Even as they enjoy what they now have that they didn't formerly, they often are gripped by a strong feeling of nostalgia for what have been lost, in some cases perhaps forever, such as job security and other forms of social minimum. This in itself is no proof of anything, of course, but it goes to show that at some level, the question of which is a better system shall remain forever open and perhaps unanswerable.

Part of what is meant by tolerance for low rates of expansion in aggregate scale and level of congeniality towards the steady-state is the degree to which an economic and distribution system depends on high levels of growth for realizing other forms of social good, such as full employment and reduced or suppressed – even if only in the short-term – class conflict. But if these other social goods are to be realized even under growth neutral conditions, that is, without continually enlarging the size of the proverbial pie, they would have to be pursued by other means, means that necessarily involve more centralized economic decision-making, that is, greater (but preferably also smart) government involvement in the economy, which means, and of course, more restricted liberty in ownership, trade, production and consumption. The conclusion, therefore, is that bringing the consideration of the norm of distributive environmental justice to bear is most likely to lean us in the direction favoring principles that call for greater government involvement in the economy, the steady-state, and that has limited need for redistribution for purpose of equalization. Of course, in the end, even when all the different values, and the sources of their potential conflicts, are laid bare, how much of one a society is willing to surrender will depend on how badly it wants more of any of the others.

How, then, should we think of redistributions under current global conditions from the point of view of either of these two types of theories? Let's begin with historical theories, represented here by libertarian theories such as Nozick's. So far as environmental distribution is concerned, historical evidence for serious past "libertarian injustices," that is, injustices in acquisition and transfer of environmental goods and bads, in both the domestic and international contexts, is overwhelming. Land enclosures, colonization, imperial conquest, unfair and unfree trade, and discrimination against and

exploitation of the disenfranchised by the powerful on varying fronts are but the most notable transgressions. The cumulative effect is that the pattern of holding in terms of material wealth that obtains today is not what it should be: some have more, and sometimes a great deal more, than what they might have been entitled to, while other have less, and sometimes a great deal less, than what they might have been entitled to. As such, at the present time, considerable rectification, of the sort and magnitude that can only happen through state actions (or more generally, forces exogenous to the market) is obligatory *on libertarian ground*. Where there is bound to be a great deal of possibly unresolvable uncertainty is over the question of how the scale of the redistribution is to be determined. Nozick was appropriately vague on this practical question:

> "Lacking historical information, and assuming (1) that victims of injustice generally do worse than they otherwise would and (2) that those from the least well-off group in the society have the highest probabilities of being the (descendants of) victims of the most serious injustice who are owed compensation by those who benefited from the injustices… then a *rough* rule of thumb for rectifying injustices might seem to be the following: organize society so as to maximize the position of whatever group ends up least well-off in the society."[199]

Noticeably, in its current form, the rule is nearly indistinguishable from Rawls's Difference Principle (which of course is not by itself a reason for either accepting or rejecting it). The chief problem with it, however, is its incompleteness: if maximizing the position of the worst-off group is necessary for redressing past libertarian injustices, it is not obvious why checking the advancement of the best-off group would not be. Moreover, as heavily burdened with past libertarian injustices as we are, it would seem that

[199] Nozick, 1974, 231.

rectification – by whatever means – is not just needed at this time but that it must, both in theory and in practice, be accorded significant weight relative to other aspects of the distributive system. Until we have made some meaningful progress towards redressing past wrongs, just transactions now and in the future (by libertarian standard) would nonetheless perpetuate unjust patterns of holding because they start from an unjust baseline.[200] But in fact, between the principle of rectification and the principles that govern acquisition and transfer, defenders of entitlement theory of justice typically do not so much as pay lip service to the former while devoting much of their energy to trumpeting the latter.

Now how should we understand redistribution being called for under current global conditions from the point of view of ahistorical theories of justice? Even if we should favor a version of this type of theory that features some principle of redistribution that ameliorates inequality as generated through people's normal and free participation in acquisitions and transfers, it does not automatically mean that the kind of redistributive measures being called for now can be justified on its basis. More generally speaking, whether all and any redistributive measures can and should be justified by reference to the principle of redistribution within an ahistorical theory depends on two things: (1) the scope of such theories (and by derivation their constitutive principles) and (2) whether certain redistributive measures that justice seems to demand might fall outside of it, and need to be justified in some other way. I argue that since ahistorical theories of justice are

[200] Thomas W. Pogge, "A Global Resources Dividend," *Ethics of Consumption: the Good Life, Justice, and Global Stewardship*, eds. David A. Crocker and Toby Linden (Lanham, MD: Rowman & Littlefield, 1998), 508. Pogge has tried to show how little it would demand of wealthy nations to alleviate global poverty. Yet he is not doing this in order to argue that no more than this little bit should be done in the name of justice. He is doing this to show how even this minimal requirement demands more of wealthy nations than what they are in fact doing.

typically supposed to be theories of what an ideal system of distribution in an ideal society ought to be, their scope of application is inherently limited. In particular, they are not especially well-suited for addressing questions of how societies should be transformed from the non-ideal *status quo* into the ideal (or at least the near-ideal) conditions *in ways that are themselves just*.

That ahistorical theories of justice tend to be long on articulating the ideal system of delivering just distribution and short on specifying directions for getting there seems to be common presumption among theorists. For example, commenting on recent literature on global distributive justice, Charles B. Beitz notes that a great deal of it "were framed as if the most important practical consequence of taking justice seriously would be a requirement to advocate large increases in inter-country transfer payments. [But] this is a mistake: a confusion of a part for the whole."[201] Beitz gives an indication of what he takes the whole to be when he concurs with Rawls that "the aim [of a theory of distributive justice] is to design a social system so that, so far as possible, whatever distributions were produced by its normal operation would be acceptable."[202] However, it

[201] Charles R. Beitz, "Cosmopolitanism and Global Justice," in *Current Debates in Global Justice*, eds. Gillian Brock and Darrel Moellendorf (Dordrecht, The Netherlands: Springer, 2005), 23.

[202] Beitz, 2005, 23. It may also be of interest to note that Beitz goes on to say that "[d]irect income transfers were to be relied upon to guarantee a suitable social minimum, but this was a backstop for circumstances in which markets failed." This curious statement obfuscates the issue by conflating empirical description with normative evaluations. The notion of "market failure" is not only inherently normative, but more importantly, fundamentally ambiguous (and for that reason deeply misleading). The market is a mechanism by which scarce resources are allocated according to ability-to-pay, not *needs as such,* that is, needs as they exist independently of the ability to pay for meeting them. Therefore, it is precisely from the *normal* functioning of the market that deprivation results insofar as it is the case that some needs will always exist even though the ability to pay for meeting them does not. It follows, then, that if we are measuring the success or failure of the market as an institution according to its *internal logic*, that is, from a *morally neutral* point of view (which in any case is the point of view welfare economists tend to think they are writing from), the existence of deprivation indicates *market success*. Alternatively, we might mean by the notion of "market failure" that the institution in question fails to achieve some external good, such as equal need-satisfaction for all (a distinctly moral value), even though it has achieved excellence according to its internal standard. This distinction is crucial because on one interpretation of "deprivation as market failure", it takes strengthening or at least maintaining the role of the market and improving its working to eradicate it

is not clear as to the sense in which calling for inter-country transfer payments forms part of a theory of the ideal social system (assuming this is what Beitz means). For in order for a system to regularly produce acceptable outcomes, it is not enough that it operates normally, it must also be the case that the background conditions in which the system operates fall within some range we would characterize as normal.[203] (Even a properly functioning rice cooker may make a lousy pot of rice when used at higher altitudes than is assumed by the original design.) After all, if we see the transfer being called for now as itself a part of the normal operation of an ideal social system, then we are not only presupposing that the status quo is in some sense normal, but that the transfer can be deduced straightforwardly from a theory of the ideal system. In this case, advocacy for the transfer relates to the articulation of the ideal social system not as part to whole but rather as empirical application to general principles. If, however, we see the transfer being called for now as part of the transition from the unjust *status quo* to a condition more conducive towards the establishment of the ideal social system , then it is not so much an application of the principles of justice definitive of that system as preparation for their applicability.

In a similar vein, Philip Pettit has claimed that the "specification of the just social order", which to him is the "traditional philosophical concern [for political

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but on the other, it takes diminishing the role of the market and strengthening the role of the government to eradicate it.

[203] This is why there is no analogy between the relation between ideal normative theories and social conditions and the relation between laws of physics and physical conditions. While it is indeed the case that the absence of friction is a standard assumption of many physical laws, and that it is a condition that is rarely satisfied in reality, still, depending on the subject matter at hand, so long as friction from ambient air is a sufficiently small factor relative to the others, it poses no threat to the applicability of these laws. By contrast, it is far less obvious that most of the time the social conditions in most places are sufficiently close to the ideal envisioned in most contemporary, or not-so-contemporary contract theory of justice.

philosopher],"[204] ought to be distinguished from "two closely related ones": (1) "the scientific question of what social orders can arise from the existing one" and (2) the practical question of what we are obliged to do by way of transforming the existing order into a more just dispensation."[205] In a trivial sense, the question of transformation is practical if any question is. But it is less certain that it is practical in the sense of being *non*-theoretical, in its own right. In fact, I am quite certain it must be an important theoretical question in its own right as to how to effect the transition from what is to what ought to be the case. While it is correct to say that "if one cannot say how society should be organized in an ideal world…one [cannot] know what changes should be wrought in its mundane equivalent,"[206] it does not follow that knowing the ideal means knowing how to achieve it, especially in ethically acceptable, and just, ways.

Indeed, Pettit's deployment of the deontic notion of "obligation" belies what he may have intended to assert with the statement. Even if we are not obligated to, say, resort to violent means, might we never be permitted to do so, in the name of justice? This and others like it are clearly *theoretical* questions without stretching beyond reason the meaning of "theoretical" (and indeed, philosophers, reaching as far back as at least Aristotle, have written on it), even though they may not be theoretical questions *about distributive justice*. So Pettit's claim that the three questions are distinct and separable is neutral on the question of what the "close relation" between the latter two and the first, the "traditional philosophical concern [for political philosophers" is supposed to mean for the scope of a theory of distributive justice. It seems that so long as it is restricted in the

[204] Philip Pettit, *Judging Justice: An Introduction to Contemporary Political Philosophy* (London: Routledge & Kegan Paul, 1980), xi.
[205] Pettit, 1980, xi.
[206] Pettit, 1980, xii.

way indicated by Beitz and Pettit, the theory must have but limited value for addressing redistributive measures required expressly for transitional purposes.

This argument can be further strengthened by direct evidence for my claim that theories of the ideal social system – contractarian theories of justice being the most notable examples – do not typically contain recipes for how normal background conditions necessary for its establishment and operation are to be achieved. The fact is that theories that are plausibly thought of as dealing specifically with the transition from abnormal to normal social conditions for purpose of distributive justice are often distinct and separate from any ahistorical theory of justice. Let me give two examples, one concerned with peace, the other with violence. In most nominal theories of distributive justice, the assumption of peace forms part of the general background condition, or *pre*condition, for the establishing and the subsequent normal operation of some ideal system of distribution. However, the same theories will not necessarily contain recipes for how to achieve peace if it does not in fact obtain, which is a different subject matter altogether. Secondly, while economic redistribution and political reorganization through violent means is sometimes necessary for the transition from abnormal to normal, this topic does not usually fall within the purview of ahistorical theories of distributive justice either.[207] It is rather dealt with either in theories of revolution or, more broadly, of radical political philosophy.[208] Interestingly, Marx, who has more than most to say about this issue, particularly in relation to inequality and exploitation, is nonetheless thought – rightly or wrongly – *not* to have a theory of distributive justice (and revolution is

[207] Locke's theory of revolution may be thought of as an exception.
[208] Ted Honderich, "Inequality and Violence, And Differences We Make Between Them," in *Nature and Conduct*, by Royal Institute of Philosophy, 1975.

supposed to take us straight from the state in which justice cannot be had to the state in which justice is no longer needed).[209]

So far as the redistributive measures being called for now are concerned, how their justification is to be furnished depends not just on what theory and principle of distributive justice we have antecedently accepted, but also on what we take the nature of these measures to be. There is a preponderance of reason for thinking of the current status quo as abnormal, and therefore of the redistributive measures under discussion as essentially transitional or transformative towards more normal conditions. However, since it is not abnormal in the sense of lacking general peace, nor do we expect these redistributive measures to involve violence, it is to some theory of distributive justice we naturally turn for understanding and justifying them. As I have tried to show, the transition from abnormal to normal is inadequately handled by ahistorical principles of justice but readily handled (if only in theory) by the historical principle rectification. What this suggests to me is the possibility of a hybrid theory of justice that features a backward-looking principle designed to deal specifically with remedying past injustices. This principle, however, does not commit us to a purely historical theory of justice. It is consistent with our favoring forward-looking, ahistorical, pattern-honoring principles of distribution in a rehabilitated and normalized social condition.

Whether these principles include an equalizing principle of redistributive will depend on what the other principles are and how much inequality will be allowed to be generated in the first place through largely decentralized economic decision-making. Given the contingent relation between theory and practice, between reality and ideal, and

[209] Allen W. Wood, "The Marxian Critique of Justice," *Philosophy and Public Affairs*, Vol. 1, No. 3, 1972, 244-82.

between the past, the present and the future, by adjusting its lens, as it were, depending on what it is looking at (and perhaps what it wants to see), a hybrid theory such as just crudely outlined seems to allow us to better understand the normative basis and implications of the call for redistribution at this historical junction than might have been possible from the point of view of either contributing theory.

6.5 Equality: Principle versus Outcome

It is a truism, perhaps, that one of the most profound distributive outcomes of wealth redistribution in today's world would be a drastic reduction in inequality, both domestically and internationally, in what I earlier in the chapter called "total holding of all things valuable". More generally, a world that honors the principle of a universal social minimum (or equality, à la Sen, within the space of basic needs), however this is determined, and recognizes ecological constraints as well would accommodate less inequality in material possession and money income than one that does not do either of these two things. How is it possible, then, that relative equality might be realized without overt commitment to or explicit pursuit of egalitarianism (with respect to "total holding of all things valuable")? Is there not something like the hedonistic paradox going on here, where we are more likely to end up getting something if we do not deliberately aim at getting it (by, say, acting on a maxim which contains the name or definitive description of the desired end-state)? If we can get equality without being egalitarian, might it not dispose of or at least defuse the theoretical debate about the *principle of equality* in distributive justice?

One answer, the trivial one, is negative, and it is based on Amartya Sen's analysis of the idea of equality. According to that analysis, the debate about equality cannot be disposed of, not because of normative reasons alone, but also, and perhaps more importantly, because of logical and semantic reasons. The non-trivial answer is a qualified "yes". Let me explain the latter answer by showing how, contrary to widely-held beliefs, relative equality must result from (as opposed to being merely consistent with, which is a much weaker claim) libertarian social institutions and economic policies. I single out libertarianism for this demonstration for the simple reason that it is the one theory that is thought to have the most inegalitarian implications. Moreover, I want to suggest that indifference to or even contempt for the idea of equality does not necessarily result in radical inequality.

As noted earlier in discussing Sen's analysis of the concept of equality, libertarianism is committed to "equal liberty". Now libertarians understand "liberty" negatively, that is, freedom from the meddling of others (the state in particular). But as has often been pointed out, the negative doctrine of liberty cannot constitute an adequate foundation for a complete social/political philosophy, about what the government should or should not do. A baby left alone is soon a dead one. Liberty (like choice) is only incoherently thought of as something desirable entirely for its own sake, as an end in itself. We do not live to be free, nor is it the case that we need freedom just to live. It seems closer to the truth to say that we want freedom to *live freely* (and *well*), but of course we can neither live freely nor live well if we do not live at all, and do so like human beings.[210] And it is precisely for guaranteeing that we all live at all, and like

[210] It is worth remembering that libertarianism also refers to a particular position in debates about free will and determinism. It is not an accident that libertarianism in issues of justice and libertarianism in issues of

human beings, so as to be able to *enjoy* (as opposed to merely *have*, in some passive sense of the term) our freedom, that we need a positive doctrine of liberty that requires more of the government than non-interference.[211] This means that "equal negative liberty" must be capable of being "cashed out" in terms of equality in a number of related spaces either conceptually or materially derivative of (the capacity to enjoy) negative liberty. One such space is occupied by basic needs, whose satisfaction is the precondition for (or indeed the very meaning of) living at all. What I want to suggest is that even this minimal (additional) assumption (that negative liberty cannot subsist on its own, suspended in a material vacuum) would take libertarianism considerable distance in the direction of restricting inequality by means of placing constraints on acquisition and transfer of assets, provided, of course, that we also correctly understand the ecological reality of the world.

It is possible to interpret both the "sufficiency condition" and the sharing clause (aka "the Lockean Proviso") as answering to the concern with basic needs. Since for Locke, the right to self-preservation and, derivatively, to its material precondition, form

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free will share the same label: the two positions have clear affinity with each other substantively. Libertarians about matters of justice are far more likely also to hold the view that our socioeconomic status (among other things) is primarily a result of our free choice and only marginally attributable to circumstances. Whether this is true generally, we have good reasons to believe it is false specifically in respect of economic success and failure. As Peter Singer reminds us, "[t]he Nobel Prize-winning economist and social scientist Herbert Simon estimated that 'social capital' is responsible for at least 90 percent of what people earn in wealthy societies like those of the United States or northwestern Europe. By social capital Simon meant not only natural resources but, more important, the technology and organizational skills in the community, and the presence of good government." ("What Should a Billionaire Give – and What Should You?" *The New York Times Magazine*, December 17, 2006). But if libertarianism in questions about justice presupposes libertarianism in questions about human choice and action, and libertarianism about human choice and action is based on ignorance about facts, then abstract philosophical argumentation can do little to settle the issue one way or another.

[211] This elementary point has been eloquently and repeatedly argued. See, for example, chapter 1 of Henry Shue's *Basic Rights: Subsistence, Affluence, and U.S. Foreign Policy* (Princeton, NJ: Princeton University Press, 1980) and *Social Welfare and Individual Responsibility*, eds. David Schmidtz and Robert E. Goodin (Cambridge; New York: Cambridge University Press, 1998), especially part 2 (by Goodin). The capabilities approach developed by Amartya Sen and Marta Nussbaum is also a direct rebuke of the formalism of (negative) libertarianism.

the justificatory foundation of the right to appropriation without consent, any one act of appropriation, by any one individual in relation to any one part of the common is legitimate only if it does not violate those same prior rights of others. But of course, the preservation of the biological self essentially requires or involves the meeting of its basic biological needs. Specifically in regard to the sharing clause, even though Locke was himself vague about what he meant by "enough and as good" (see 6.1 for my own analysis of the phrase), any interpretation thereof that appeals to concepts such as harm or injury (according to which the sharing proviso says that no appropriation is legitimate that harms others), which is to say, any minimally plausible interpretation, is most plausibly understood in terms of the notion of basic needs.[212] While we can harm people in many a way, depriving them of the means to meet their basic needs is certainly one of the surest and most effective ways of doing so; whatever else we can be said to do in depriving a human being of their means of subsistence, we must be said to have done them harm.

How much inequality in holding would be consistent with genuine adherence to the two Lockean provisos (suitably interpreted), the spoilage clause and the sharing proviso, in which the notion of basic needs plays an important role? Locke and his followers might have thought, and did, and continue to think that the entitlement theory of justice provides ample justification for radical inequality in holding. But it does not follow from this that the theory justifies radical inequality in holding. Theories are all the time being misused, abused or otherwise co-opted for ideological purposes, even those to which the original theorists may be opposed. To see how the radical inegalitarian

[212] Gopal Sreenivasan, *The Limits of Lockean Rights in Property* (New York: Oxford University Press, 1995), especially chs. 1,2 and 4.

implications of libertarianism come to be, it helps clearly to distinguish among the different premises from whose conjunction they are drawn. They can be divided into two categories: normative and factual. Normative premises assert self-evidently true or valid "axioms" or "first principles" that issue largely from a particular theorist's moral intuitions. These concerns matters of basic values, such as the nature of the goodness of pleasure, equality, liberty, rationality, truth, and so forth. These first principles may or may not admit of proof. Factual premises assert (non-moral) facts about the world, including, of course, about human nature.[213] Those statements are either true or false.

What I am trying to highlight is the importance of clearly distinguishing between what is essential and what is non-essential to this type of theory in particular, and to any theory of distributive justice in general. John Locke, as we know, as well as many others who have written on issues of justice and property (as well, indeed, as many who have not), have been (grossly) *empirically* wrong, about natural resources. If Locke's ignorance was excusable, given that he wrote in the 17th century, the ignorance of many writing and talking about the issue today is not. My point, however, is even though the cornucopian assumption about nature, which I have shown is decidedly false (see chapter 5), features prominently in Locke's own, and Lockean-inspired theories of property, and continues to be taken for granted by many contemporaries libertarians, it is nonetheless not essential to these theories. Essence and importance are two distinct categories.[214] What is essential to these theories, and indeed any normative theory of justice, are those propositions that are more appropriately classified as statements of first principles:

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[213] More generally speaking, *any* argument in first-order normative ethics must have this form, containing both normative premises and factual ones. A simplified version of this form is Aristotelian syllogism, in which the Major premise is normative, the minor premise is factual, and the conclusion is normative, or practical.

[214] Saul A. Kripke, *Naming and Necessity* (Cambridge, MA: Harvard University Press, 1980).

incapable of proof but perhaps needing none either. So far as Locke's or Lockean theories is concerned, I would include among these the doctrine of natural rights, the doctrine of self-ownership, and even the so-called labor theory of value, all of which are clearly definitive of any nominally libertarian theory of justice. It would, therefore, be *logically possible* to combine *these* propositions (or at least a number of them) with more ecologically informed empirical assumptions about the natural world, about land, about natural resources, and about the limits to the carrying capacity of the ecosystem, God-given or not. Should we do so, the resultant theory, would be a "new and improved" version of libertarian theory of justice, which, as I will further argue below, would likely in practice have far more egalitarian implications.[215]

The larger point I wish to make with this analysis is that while our *a priori* intuitions about the intrinsic desirability of equality may matter, *intrinsically*, it may matter less how unequal the distributive outcome will be of the application of any particular set of distributive principles than we have often been led to believe. What the actual outcome would be of the application of a normative theory depends at least as much on empirical assumptions about the subject to be distributed as well as *other* distributive values we may hold, as it does on our beliefs about the value of equality (of total holding) as such. While explicit commitment and adherence to the egalitarian principle may produce egalitarian distributive outcomes (or it may not, if the hedonistic paradox has any truth to it), regardless of whether the world is resource rich or resource scarce, this does not mean that the absence of such explicit commitment opens the door to

[215] In chapter 1, I noted that whether a utilitarian would condemn ill treatment of animals of a particular species depends importantly one her scientific understanding as to whether that species is sentient. There is a close parallel between that issue and the one under discussion: if the core normative commitment of utilitarianism is its attaching great moral weight to the ability to suffer pain and pleasure, this commitment is nonetheless consistent with different views about whether any particular entity has this ability.

unmitigated inequality. For there are, to use this imperfect metaphor, (at least) two doors that jointly control how much inequality is to result *in fact*: one door is the distributive principle (s), the other is empirical statements about the world (about the finitude of the thing to be distributed, the number of claimants, etc.). As widely as we might open one of them, if the other one is stuck at an ajar position, the size of the opening is bound to be limited. Ecological finitude is the door stuck at the ajar position.

The familiar question about whether it is the principle of equality or the principle of minimum standard on which we should base our theory of distributive justice – whether it is in the domestic or in the global context – has often been posed in a way that seems to assume or suggest that (1) the eventual practical outcome of these two kinds of principles would diverge drastically, and (2) which kind of outcome we will end up with hinges solely on our choice of distributive principle.[216] But these assumptions are themselves made in an ecological vacuum. Indeed, this continues to be a major weakness in much writing on distributive justice, perhaps in particular international distributive justice. If we ever could before, we can no longer afford to pretend as though environmental sustainability and economic distribution are separate or separable issues. On the one hand, to consign ecological issues to the margins of discussions of distributive justice is fundamentally to fail to appreciate the critical importance of resource scarcity, environmental pollution and ecological stress for how we think about and strive for social justice under the current global ecological conditions. On the other hand, in the case of those who have been advocating redistribution now and greater equality in the future, both between and within countries, bringing attention to and raising awareness of the

[216] See, for example, Veronique Zanetti's "Egalitarian Global Distributive Justice or Minimal Standard," in *Real World Justice: Grounds, Principle, Human Rights and Social Institutions*, eds. Andreas Follesdal and Thomas Pogge (The Netherlands, Springer, 2005), 199-213.

unfortunate fact of the global ecological crisis and its implications for justice may do more for their causes than they ever could have hoped for by championing the abstract idea of equality. If we should "never waste a crisis" in politics,[217] we should do the same in our theoretical enterprises.

[217] Rohm Emmanuel, chief of staff to president Obama, has been widely reported to say this repeatedly.

Ch. 7 Environmental Virtues

7.1 Virtuous Sentiments

If environmental sustainability and social justice are macro moral goals for the society at large, their achievement requires of the individual members of the society to each live, at the micro level, an ecologically sound lifestyle, wherein they knowingly, willingly and consistently conduct themselves in ecologically sound ways. In this chapter, I explore just what such a lifestyle might involve and what are or should be the environmental virtues constitutive of, and by derivation the environmental vices incompatible with it.

"A complete environmental ethic," writes Ronald Sandler in the introduction to his edited volume on environmental virtue ethics, "will include both an account how one ought to interact with the natural environment and an account of the character dispositions that one ought to have regarding the natural environment."[218] In Rosalind Hursthouse's words, to instill environmental virtue in a person is to "shape [in them] a particular way of perceiving, acting in relation to, feeling and thinking about the natural world."[219] Two main themes of environmental virtue ethics, as suggested by these general remarks, and Aristotle's own canonical view, are ecologically virtuous feelings and passions on the one hand, and ecologically virtuous conduct and actions, on the other. I treat them separately not due to a failure to realize that they are related, and perhaps systematically so (indeed, they had better be), but rather because I believe there are substantial limits to the usefulness of the kind of language typically deployed in discussing the former, for discussing the latter. In this section, I focus mainly on the first.

[218] Ronald Sandler, "Introduction: Environmental Virtue Ethics," in *Environmental Virtue Ethics*, edited by Ronald Sandler and Philip Cafaro (Lanham, MD: Rowland and Littlefield, 2005), 6.
[219] Rosalind Hursthouse, *On Virtue Ethics* (New York: Oxford University Press,1999), 165.

I will examine and criticize the view that perceptions, feelings and thoughts about the environment that are based on the belief that the latter has mind-independent intrinsic value and these constitute environmental virtues. In the following sections, I will turn to the questions of ecologically-sound conduct. I suggest that the kinds of attitudes and feelings discussed in this first section are neither necessary nor sufficient for informing or otherwise motivating ecologically sound conduct.

A partial list of attitudes towards and feelings about the environment that have been claimed to be worthy of the label of environmental virtues include: proper humility[220], respect[221], love,[222] reverence,[223] benevolence, friendless, kindness, generosity, compassion,[224] gratitude, attentiveness, aesthetic appreciation and wonder.[225] A partial list of the corresponding environmental vices include jealousy, selfishness, greed, profligacy, indifference to the well-being of others,[226] and arrogance.[227] The first thing to note about these attitudes and feelings is that all of them have traditionally (and perhaps also universally) been recognized as either virtues or vices, quite independent of any special consideration of the natural environment. They are properly called generic virtues or generic vices. What then is meant by calling them specifically *environmental* virtues or vices? For the qualification to be meaningful and non-trivial, it must presuppose an independent judgment to the effect that the natural world, the environment, qualifies for

[220][220] Thomas E. Hill, Jr., "Ideals of Human Excellence and Preserving the Natural Environment," in *Reflecting on Nature: Readings in Environmental Philosophy* (New York: Oxford University Press, 1994), 98-110.
[221] Paul W. Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton: Princeton University Press, 1986); Holmes Rolston III, *Environmental Ethics: Values in and Duties to the Natural World* (Philadelphia: Temple University Press, 1988).
[222] Ronald Sandler, *Character and Environment: A Virtue-Oriented Approach to Environmental Ethics* (New York, NY: Columbia University Press, 2007), 2.
[223] Albert Schweitzer, "The Ethics of Reverence for Life," *Christendom*, 1, 1936, 225-39.
[224] Geoffrey Frasz, "Benevolence as an Environmental Virtue," in Sandler and Cafaro (ed), 2005, 125.
[225] Hursthouse, 1999, ch. 7.
[226] Frasz, "Benevolence as an Environmental Virtue," in Sandler and Cafaro (ed), 2005, 125.
[227] Hursthouse, 1999, ch. 7.

being the intentional objects of the virtuous attitudes and feelings, or possess properties that render them inappropriate objects of the vicious attitudes and feeling. After all, proper humility is a virtue only when, by definition, it is directed at what it ought to be directed and nothing else. And the same is true of all of these other virtuous attitudes. So the case for any particular attitude or feeling being a specifically *environmental* virtue must rest on some intellectual judgment that there are some properties that the environment has in virtue of which it is worthy of that attitude and feeling.

The one property that writers who defend the view that these attitudes and feelings are *environmental* virtues have tended to cite is the environment's possession of some kind of intrinsic value: of either the mind-dependent or the mind-independent sort (see 2.3 and 2.4). But just what is the nature of the connection between these attitudes and feelings, on the one hand and the belief about the intrinsic value of the environment, on the other? Are they appropriate intentional objects of these attitudes and feelings *because* they are intrinsically worthy or are they deemed intrinsically worthy because they are the intentional objects of these attitudes and feelings? The first alternative presupposes that the intrinsic worth of the natural environment is capable of being established as an objective, empirical fact of sorts. In chapter 2.3, I criticized the realist, mind-independent theory of value in general and in 2.4, the realist, mind-independent theory of the intrinsic value of nature in particular. Against the first, I argued, on the basis of the interest-theory of value (according to which something has value insofar as it is the object of an interest, broadly construed, that is, including instrumental and non-instrumental interests) that the very idea of mind-independent and interest-neutral value is unintelligible. More particularly, I argued, against the latter, that all arguments that

have been adduced for the intrinsic value of nature are in effect based on *human* interests of one kind or another, that is, in certain *human* pro attitudes towards those natural (that is, inherently non-moral) features of the natural world (whether it is orderliness of some kind, or integrity – whatever that may mean – or beauty) on which the intrinsic value is believed to supervene. Therefore, I do not deny that the environment has intrinsic value. What I argue is that since the idea of intrinsic value is ambiguous, any assertion about it needs to be clear as to which metaphysical theory of value in general, and intrinsic value in particular, is being assumed. The only kind of intrinsic value that the environment can be said to have, in my view, is of the mind-dependent variety.

This analysis suggests that we cannot approach the questions raised at the beginning of the last paragraph without specifying the type of intrinsic value the intentional objects of the proposed environmentally virtuous attitudes and feelings are supposed to have. If it is supposed to be of the mind-independent kind, these attitudes are no virtues at all insofar as they are based on a fundamental intellectual error. A person who has no faith in God cannot be said to be lacking in a key form of human excellence if there is no intellectually respectable way of demonstrating the existential reality of the purported intentional object of such a mental state. Indeed, the opposite may well be true insofar as belief in the existence of a supernatural being is indicative of certain forms of serious intellectual shortcomings.

If, alternatively, the kind of intrinsic value the intentional objects of the proposed environmentally virtuous attitudes and feelings are supposed to have is of the mind-dependent variety, then the same attitudes and feelings constitute the very human interests – of the non-instrumental kind, of course – in which that value consists. This

certainly does not mean that these attitudes and feelings must themselves be irrational or baseless. To the contrary, they may (and will most likely) be informed by intellectual understandings of non-moral, that is, natural facts about the environment. I believe, for example, that Thomas E. Hill, Jr. is quite right when he writes that "increased understanding of nature tends to heighten people's concern for its preservation."[228] The key words here are "tends to"; the idea is not that the intellectual understanding of the immense complexity of the ecosystem (as opposed to – to belabor the point – beliefs about the mind-independent intrinsic value of the ecosystem) logically necessitates any particular evaluative attitudes, such as proper humility, benevolence and wonder, towards nature. Rather, the point is that these are natural, if not universal psychic responses to such intellectual understanding. It is by no means an extravagant suggestion that human nature may be such that we do not tend to remain completely indifferent emotionally towards what we know. If this were not so, our species would be in still deeper trouble than it already is.

But if cognitive beliefs about the environment form the *ground* for diverse modes of non-instrumental interests in the environment, what might be the *content* of these interests? What exactly is one interested *in*, insofar as one harbors proper humility, respect, love, reverence, benevolence, gratitude, aesthetic appreciation and wonder towards the environment? The answer, as I suggested in 2.4, ought to be the preservation of those empirically describable, natural features of the environment, knowledge (casual or scientific) of which elicits these feelings in the first place (or on which the mind-dependent intrinsic value of nature supervenes). The significance of this point cannot be overstated: for it straightaway brings us to the second (and in my own view the more

[228] Hill, Jr., "Ideals of Human Excellence," 103.

important) of the two main themes of environmental virtue ethics, namely, the nature of ecologically virtuous conduct. While attitudes, feelings and beliefs, or "inner states" in general, may themselves be the terminal objects of moral appraisal, and they may benefit their possessor in one way or another, it seems gratuitous to call them *environmental* virtues unless they also have the tendency reliably to issue in conducts that promote environmental sustainability. Mental entities are immaterial, and by themselves they leave no material footprint (see 4.3 for a more detailed discussion of this). They can only do so indirectly, by shaping human conduct. Correspondingly, no theory of environmental virtues can be complete without an account of environmentally virtuous acts, which is derivative of, but nonetheless distinct from, an account of environmentally virtuous sentiments.

7.2 Virtuous Acts

Crudely, acting virtuously towards nature involves acting in relation to it in ways that *express or exhibit* virtuous attitudes towards it. But a more substantive theory, one that can genuinely live up to virtue theory's reputation for user-friendliness, about just which types of act so qualify, must include not only an account of what it is to act "in relation to" nature, but also an account of what it means for an act in relation to nature to express certain thoughts, beliefs and feelings about it. Generally speaking, any act might be an expression of any idea, depending on who is judging, and the complex of background assumptions (some empirical, some metaphysical, and still others normative) through which the meaning of actions is distilled. Moreover, all expressions of the same mental state are not equal: some are powerful, some tepid, some costly, some not, some

straightforward, some subtle, direct, some indirect, some preferred by those who express the idea, while others by the targeted audience, and perhaps still others by third-party spectators with no personal stakes in the whole business. If this is true of interpersonal attitudes and feelings – and we know it is – it can only be more so of human attitudes towards and feelings for the non-human.

A wide range of acts can be, and have been, labeled as environmentally virtuous insofar they all can be plausibly said to issue from pro-environment or "green" sentiments. Recycling, growing vegetables (and, increasingly, raising chicken), enjoying environmental amenities, demonstrating against the World Trade Organization, boycotting environmentally objectionable consumer products, and arguably even participating in what has been called – though not necessarily always fairly or rightly – "eco-terrorism", are just a few examples. How, then, might we begin to systematize our thinking about these conducts such as to make principled distinctions among or otherwise classify them, even as we recognize their commonalities? In *Character and Environment*, Ronald Sandler has discussed four genera of environmentally virtuous conduct. First, there are what are called virtues of environmental sustainability, which "dispose their possessor to maintain or promote a limited-term sustainability."[229] Secondly, there are virtues of environmental activism, which are "conducive[…] to success in social and political domains in securing environmental goods[…]"[230]. Thirdly, there are virtues of communion with nature, which "enable an individual to enjoy and take advantage of [environmental amenities]".[231] Lastly, there are what are called virtues of environmental stewardship, which "involve dispositions to appreciate the various ways environments

[229] Sandler, 2007, 48.
[230] Sandler, 2007, 49.
[231] Sandler, 2007, 50.

function as public goods…to maintain them as pubic goods… and to see that the goods are justly distributed."[232]

Among these four groups of alleged environmental virtues, virtues of communion with nature are qualitatively different from the other three: virtues of environmental sustainability, activism and stewardship. Behavioral expression of communion with nature, as Sandler understands it, tends to take the form of enjoying and taking advantage of environmental amenities, that is, non-basic environmental goods. For example, one practices this latter virtue insofar as one is disposed to appreciate the beauty of the sunset or the call of a songbird. By default, acts such as these mean more to the individual than they do to the environment, to which it may make no material difference at all (see 4.3). But even the benefits that purport to accrue to the individuals that possess these virtues are, as is perhaps typical of virtues generally, of an uncertain nature, in the sense that "they are *only* available to those who are disposed to seek or receive them (emphasis mine)."[233] For example, "an individual who is *unable to* appreciate the beauty of the sunset or the call of a songbird literally misses out on the experience (emphasis mine)".[234] Now it is of course vacuously true that one misses out on the experience of appreciating something insofar as one does not appreciate that thing. But one's missing out on appreciating something has negative implications for one's well-being only if what is being missed out is something that is integral to human flourishing.

It is no doubt Sandler's point that those who do not have a taste for nature-themed hobbies necessarily flourish less than those who, other things being equal, are not similarly disabled. But not only does Sandler not give an argument for this conception of

[232] Sandler, 2007, 55.
[233] Sandler, 2007, 61.
[234] Sandler, 2007, 50.

human flourishing, it is not clear to me that non-circular arguments are forthcoming for this claim, which one either accepts a priori, or not. Do people who don't enjoy cooking and sewing flourish less than those who appreciate the intrinsic rewards of such activities? It is not obvious to me that either the negative or the affirmative answer to such questions admits of rational support through the art of argumentation (see 6.2). But, in fact, I believe less hangs on how we resolve the issue about the personal payoff of virtues of environmental communion in terms of happiness, than might have been imagined. For whatever it is that the disposition to enjoy nature-themed hobbies does for the individual, by itself it does nothing for the environment. So even if they are necessary in a genuinely environmentally virtuous person – which I am not quite willing to grant, but no matter – they are by no means sufficient, and must be supplemented by a disposition for conduct that can make a tangible difference to the environment. This brings us to conduct that, presumably, is associated with one of the other three groups of environmental virtues Sandler identifies: environmental sustainability, stewardship and activism.

Let us begin with the virtues of environmental activism. As opposed to being distinct from the virtues of environmental sustainability or those of environmental stewardship, as Sandler's classification has it, I believe virtues of environmental activism are more appropriately treated as a species of the latter genera insofar as it is concern with either environmental sustainability or environmental stewardship or both, that defines the motivation for involvement in environmental activist activities. Put another way, participation in environmental activism is but one way in which to act out one's commitments to environmental sustainability and/or environmental stewardship. But what exactly distinguish *activist* activities from other types of activities similarly

motivated? After all, being a vegetarian does not make one an animal rights activist and, conversely it is certainly possible for one to be an animal rights activist without being a vegetarian.

We ordinarily understand activism to involve so-called grass-root efforts, i.e., efforts by ordinary citizens that agitate for change and are directed at corporations, trade groups, and governments and other institutional entities. These activities tend to be of a political and public nature, and often (but not necessarily) follow certain formulas such as mass protest, letter-writing campaigns or artistic demonstrations. Instrumental for (effective) activism, Sandler correctly notes, are traits such as "commitment, astuteness, disciplines, attentiveness, discernment, fortitude, creativity, courage, self-control, cooperativeness, patience, solidarity, perseverance, and optimism."[235] However, all these traits are "executive virtues", and they do not *by themselves* define the ends of the activities in whose performance they are to be exercised. Indeed, they are just as indispensable for being an effective human trafficker, suicide bomber, or bank robber as they are for being an effective environmental activist. Their identification does little, therefore, to advance our understanding of what is environmental about the virtues of environmental activism. Indeed, the same can be said of associating traits such as "diligence, trustworthiness, justice, loyalty and honesty" with the virtues of environmental stewardship.[236] These are generic virtues, and there is nothing specifically environmental about them.

More important, I believe, is the fact that there are obvious and necessary limitations to both the scope and the intensity of one's involvement in activist activities.

[235] Sandler, 2007, 49.
[236] Sandler, 2007, 55.

One's life can be filled with only so much that is of a political and public nature, the rest of which – the living of one's daily life – must be taken up by activities that are primarily of a personal and private nature. And it is in how one carries out these personal and private activities of everyday living where I believe the virtue of living an ecologically-informed lifestyle is practiced.

"Lifestyle" literally means the style of one's living. The notion of style applies only when a pattern is discernible, that is, where and when otherwise diverse phenomena appear to cohere around some regulative principle or norm. What we commonly call lifestyle choices are those that shape the substance and the contours of one's everyday activities, those that form the (essential) core, as opposed to optional ornamental ingredients of life. These include choices in matters such as how one dwells, eats, dresses, cleans, travels, shops, relaxes, entertains, and so forth. While we may always dispute whether any particular choice is properly called a lifestyle choice, in general, choices that can be so classified should be distinguished from a number of other kinds of choices, including choices in profession or career, in political/social activist involvement, and in hobbies. These are different spheres of a whole life and we are better served analytically by compartmentalizing them. "Green" activism, "green" hobbies and "green" jobs are not the same thing as, and do not substitute for, so far as the practice of environmental virtues is concerned, "green" living. For example, while participation in some professional capacity, in ecologically devastating industrial and commercial production practices such as mountaintop removal mining may be vicious from an environmental point of view, its viciousness is clearly different from what we might, and indeed should, attribute to

ecologically unsound consumption practices individuals engage in day in and day out in their capacity as consumers and private citizens.

While (de)limited in scope, the concept of lifestyle is nonetheless holistic *within* its proper reach, and resists reductionist interpretation. Eating fruits by itself or exercising by itself, even if done regularly, does not make for a healthy lifestyle, which involves consistently doing a variety of things with health benefits and few things if any with adverse health consequences. So living an ecologically sound lifestyle requires not doing a few select green things haphazardly but *consistently* making ecologically-informed choices in one's daily living in a *wide range* of matters and areas. In sections 7.4 to 7.6, I discuss what such choices involve in relation to three different matters and areas. But first, I wish to elaborate and defend my view that ecologically-informed lifestyle choices do not presuppose, or only weakly depends on, beliefs in the intrinsic value of nature.

7.3 Ecologically-sound lifestyle and the intrinsic value of nature

Like virtues of environmental activism, the virtue of ecologically-sound living is perfectly consistent with different shades of green commitment. Now it is an article of faith among many writers that "a central cause of reckless environmental exploitation is the attitude that nature is merely a resource for satisfying human wants and needs."[237] In 2.5, I discussed some of the confusions that afflict this line of thinking. I argued that teleological centrism, whose truth is presupposed by teleological anthropocentrism, is not the same thing as both geometric (or spatial) centrism (whose truth is presupposed by geocentrism or heliocentrism) and normative centrism (which is presupposed by the mind-dependent theory of value). Accordingly, I distinguished between strong and weak

[237] Sandler, 2007, 2.

instrumentalism about nature. Strong instrumentalism claims that the earth is not only useful, but that it has been created to be used by humanity. By contrast, weak instrumentalism is compatible with the complete rejection of teleological centrism. We can, and should, reject strong instrumentalism without rejecting weak instrumentalism. Weak instrumentalism, in the current connection, is fully capable of supporting environmental virtues. Specifically, I will argue that whether one happens to believe that nature is merely a resource for satisfying human wants and needs, may not be as decisive a factor in one's conduct towards the environment, as statements such as Sandler's would have us believe.

Part of the problem with claims that identify the attitude that "nature is merely a resource for satisfying human wants and needs" as "a central cause of reckless environmental exploitation" is that, *when interpreted specifically within the context of personal belief and personal conduct* (as opposed to at the level of macroscopic historical and cultural analysis), is that they play fast and loose with the quasi-technical notion of "cause" (and its variant "because"). I do not dispute that one who believes in strong instrumentalism or teleological anthropocentrism might feel a special sense of entitlement towards the environment and acts exploitatively towards it. Nor do I dispute that between any two people, the one with this attitude is more likely, *ceteris paribus*, than the one who does not, to act recklessly towards the environment. However, correlations, however strong, are not causation (or, for that reason, explanation). In what sense, then, can the belief that nature is "merely a resource for satisfying human wants and needs" be said to constitute a "central cause" of a particular individual's reckless acts towards the

environment? What is the import of the notion of "central cause" that is carrying much of the burden of the meaning and truth value of the statement here?

The idea – at least as best as I can make out (since the idea of "central cause" is itself loose and slippery) – seems to be that the belief is either necessary or sufficient for supporting or encouraging an exploitative disposition towards the environment. In 2.5, I already noted that the belief that nature is merely a resource for satisfying human wants and needs is, by itself, quite compatible with the moral imperatives to conserve, preserve or otherwise maintain God's creation in good conditions so that it can continue to be available for use by generation upon generation of human beings. Therefore, the belief is not logically sufficient for an exploitative disposition towards nature, which in fact seems to be much more tightly linked with two other beliefs: (1) that there is no special moral obligation to share things with other (including future) human beings, and (2) that the things in question are either quantitatively or functionally infinite such that they are incapable of depletion and/or susceptible to functional decline. These two beliefs are more reliable predictors of how people treat of something than the first by itself. I believe they provide, for example, powerful sociological explanations for the care people do or do not take of their earthly possessions. By comparison, the attachment of sentimental value, while not completely inert, is explanatorily far less illuminating, certainly of fewer sociological facts than we might like to be able to understand.

In fact, it stands to reason that, *ceteris paribus*, the more instrumentally useful and the more prone to wear and tear one believes something to be, and the larger number of people among whom one believes this resource must be shared, and the stronger one's general commitment to distributive justice, the stronger would be his or her desire or will

to act responsibly and protectively towards it.[238] The question about the belief in its intrinsic value becomes, on this explanatory paradigm, completely immaterial. This suggests that the belief in strong instrumentalism or in teleological anthropocentrism is not necessary for an exploitative disposition towards nature. A weak instrumentalist, who is agnostic on the question of teleological centrism, or who rejects it outright, may nonetheless feel no compunction about environmental spoilage and devastation. Such a disposition would have to be attributable to the person's beliefs about the ways in which human survival depends on ecological conditions, about the renewability of environmental resources and ecosystems resilience, about the number of human beings that will come to depend on earth's resources, functions, and services and, finally, about the value of sharing.

It follows from this analysis that the belief that nature is merely a resource for satisfying human wants and needs really plays but a relatively small role – certainly much smaller than has sometimes been suggested – in explaining humanity's reckless and exploitative attitudes towards nature. The latter may be due much more to our long-standing ignorance about ecological finitude, about the fragility of the earth, about thermodynamics, about our utter dependence on the health of the environment, on egoism, individualism, hubris, petty greed, short-sightedness, entrepreneurial overzealousness, outright selfishness and humanity's collective *akrasia*, than to the failure to acknowledge the intrinsic value of nature. Nor do I think it true that instrumentalism about nature is

[238] It must also be recalled that on the interest-based definition of value, something can have no value – either positive or negative – to some center of consciousness, if it is not the object of *any* kind of interest at all. If I am disinterested, or uninterested, in something, I neither love nor loathe it; I am indifferent towards it. Now obviously indifference or disinterestedness cannot possibly motivate care (or harm). Therefore, it can be argued that *not* seeing any instrumental value in the environment may be, if it means utter indifference towards it, just as environmentally harmful as seeing such value in it.

itself either necessary or sufficient for these other beliefs. In fact, in my view, the problem is not that we do recognize the environment's instrumental value to humanity, but rather than we have not appreciated that fact *enough*. The problem is not so much that not enough of us care about nature for its own sake but that too many of us care too much about our own material comforts and those of people close to us and too little about our fellow human beings, especially those who are not close to us. Too few of us, I claim, have the required level of sense of and commitment to distributive justice. In addition, crude as this may sound, plain ignorance is more often than not a powerful, if not exhaustive, explanation for why people do not do what they ought to. This is the true pathological root of ecologically mindless living.

At a time when affirming the intrinsic value of the natural environment is in vogue, and doing otherwise can almost be considered politically incorrect, it is even less convincing than ever to chalk up humanity's unabated exploitation of nature to a flawed metaphysics. It is little more than a straw man. And it is a corollary of the argument of the previous paragraph that the "correct" metaphysics would offer the environment but a feeble defense against abuse. What we need more than anything to make any headway on the environmental front, I believe, is respect and compassion for our fellow human beings, regardless of their temporal and spatial location, and of equal importance, ecological literacy. If I may reason backward from treatment to diagnosis, this means that the more relevant diagnosis for humanity's current predicament would have to be cast in terms of challenges in areas such as politics, economics and material culture. A theory of ecologically-sound living, according to this logic, does not need and may be little helped

by tectonic shifts in our views on the nature of value and the value of nature.[239] A great deal can be achieved, so far as such a theory is concerned, if we remind people of our fellowship with other human beings, and teach them about societies' dependency on the natural environment.

7.4 Frugality and Material Simplicity: Needs, Wants, and their Satisfaction

The ecological impact of our everyday life is determined by our material and energy throughput, which in turn is determined by our material lifestyle. The less of each one consumes, and the less waste one generates, the lighter one's personal ecological footprint. The virtue in material and energy consumption is the mean between two vices: consuming too much, or wastefulness, and consuming too little, or debilitating self-deprivation. Since the temptation of the vice of deficiency is rather limited on the whole, towards which human beings are naturally disinclined, I will focus on profligacy and wastefulness, which are both environmentally destructive and yet powerfully seductive if not altogether addictive.

James E. Nash has defined the concept of frugality as follows:"[it] denotes moderation, temperance, thrift, cost-effectiveness, efficient usage, and a satisfaction with material sufficiency… [It] means ethically disciplined production and consumption for the sake of some higher ends…It generally implies both a reduction in the consumption of material goods *and* different patterns of kinds of consumption….[I]t thrives not only

[239] In fact, such a shift, if not done properly, can lead to absurd consequences. If the richer consumers of the world should decide that the nature must be preserved either for its own sake or for the sake of its recreational or amenity value, it might well lead them to place this concern higher that the survival and developmental needs of the world's poor for natural resources to. For an insightful discussion of this issue see Ramachandra Guha's "Radical American Environmentalism and Wilderness Preservation: A Third World Critique," in *Environmental Ethics*, Vol. 11, No. 1, 1989, 71-83.

on restrained consumption but also on conscientious conservation, optimal technical efficiency, comprehensive recycling, and an insistence on built-in durability and repairability."[240] There are, as is implicit in this passage, two distinct yet related aspects to the virtue of frugality: one having to do with one's attitudes towards oneself, one's needs and wants, and the other having to do with one's attitudes towards material things as such. The first is captured by the idea of "satisfaction with material sufficiency", while the second by that of "conscientious conservation". So far as satisfaction with material sufficiency is concerned, the issue can and should be further divided into two parts: (1) knowing where the limits of sufficiency lie, and (2) knowing what it is to be satisfied with them. Similarly, the issue of conscientious conservation also has two aspects: (1) knowing the value of material things and (2) knowing what it is to *care for/about* and *respect* them on account of that value.

My basic methodological assumption with respect to the question of moral motivation is externalism. This is essentially the Humean position that (intellectually) knowing the moral rightness of a course of action does not necessarily make one want to do it. The chief rival position is motivational internalism, typically associated with Socrates, Plato and Kant, according to which, roughly speaking, a fully rational person necessarily wills to do what he acknowledges is morally right or obligatory. Arguably, at the phenomenological level, motivational externalism makes appreciably better sense of the facts (or at least the apparent facts) about human beings. Most of us will allow that we are all too familiar with gaps, sometimes seemingly unbridgeable ones, between understanding and motivation, and action. Internalism, by contrast, solves, or "solves,"

[240] James E. Nash, "The Subversive Virtue of Frugality," in *Ethics of Consumption: the Good Life, Justice, and Global Stewardship*, edited by David A. Crocker and Toby Linden. Lanham, MD: Rowman & Littlefield, 1998.

the problem of the existence of the apparent gap by dissolving it, that is, by defining it away. Between the challenge of having to explain how various forms of *akrasia* can be possible and the challenge of having to explain how widespread and persistent ethical ignorance can be possible, I have come down on the side of the first.

Particularly in the current context, it seems to me that internalist assumptions would in principle prevent some of the most important and urgent questions from even being asked. Most notably, if *knowing* where the limits of sufficiency lie necessarily means being *content or satisfied* with those limits, and acting accordingly, or if *knowing* the value of things necessarily provides sufficient incentive for acting in ways *protective towards and respectful of* them, then obviously the intellectual and the motivational issues are collapsed into one. On such assumptions, the issue of convincing or teaching people, others or ourselves, to be satisfied with what is as a matter of fact enough and to refrain from taking more (and from wanting to take more), that some wants ought not to be fulfilled or altogether suppressed, and that things of value ought not to be wasted would, by definition, be non-issues. But much stands to be lost if we chalk up voracious acquisition, consumption and disposal to genuine ignorance about what enough means and what value material things have, and we can learn more if instead of treating acquisitiveness as a lack of knowledge we treat it as a lack of *will*. Accordingly, I will treat the issue of "satisfaction with material sufficiency" and "conscientious conservation" in two separate steps: (1) determining how to figure out, in both local and global contexts, how much is enough, and what value material things have, and (2) determining what it takes to let such intellectual understanding be desire-generating and action-guiding.

The concept of sufficiency is best understood not only in conjunction with, but perhaps, as I will try to show, *in terms of* the concept of necessity or need, as the necessary *quantum* or quality of something. In the current context, the latter concept is fundamentally relational. As Harry Frankfurt puts it, "nothing is needed, except for the sake of an end for which it is indispensable," meaning that "when something is needed, it must…always be possible to specify what it is needed for, or to explain what one cannot do without it."[241] When understood as necessity in terms of quantity and quality, the concept of sufficiency is similarly relational: no amount or quality of something can be called sufficient except for the sake of an end for which that amount or that quality of the thing is indispensable. Therefore, when a given quantity or quality of something is said to be sufficient, it must be possible to specify what it is sufficient for, that is, what it is that one cannot do with less of it in either quantitative or qualitative terms. The fact that the concept of sufficiency can be used for assessing both quantity and quality suggests that its application typically makes existential assumptions. Not only is it meaningless to invoke it in relation to what does not exist (so it makes no sense to ask how many unicorns are needed for the local zoo) but, moreover, questions about it arise typically in relation to something that has been antecedently determined to be an existentially necessary means to some end (so it makes sense to ask how much yarn, but not how many chain saws, are needed to knit a sweater). As a general rule, therefore, the more specific, precise and detailed we can be about an end, the more specific, precise and detailed our inference can be about what is existentially, quantitatively and qualitatively necessary for its realization.

[241] Harry Frankfurt, "Necessity and Desire," in *Philosophy and Phenomenological Research*, Vol. 45, No. 1, Sept., 1984, 1-13.

If we are to be able to say that the notion of sufficiency applies to material acquisition and consumption, then, according to the foregoing logic, it must be possible to say what sufficient levels, both in quantitative and qualitative terms, of material acquisition and consumption are sufficient for, that is, what it is such that one cannot do without it. Plainly, if the accumulation of material things is an end in itself, then the question of sufficiency cannot meaningfully arise. But we can safely assume that this assumption is without merit and is not worthy of serious consideration. Material acquisition and consumption are means to an end, which is, at least ultimately, the good life, the happy life, *Eudaimonia*, or whatever. While there will always be disagreements about what the ideal of the good life is, for my purpose here, which is to understand sufficiency in material acquisition and consumption, there is enough substantive agreement about some basic elements thereof. Whatever else living well and doing well must or must not involve, it must involve sufficiency in material acquisition and consumption, and not levels of material acquisition and consumption that fall outside that range. The range of sufficiency is in turn defined by means of such more basic concepts as needs and wants, and, a fortiori, the idea that there are differences between them that are genuine and morally significant.

These virtues are constitutive of two more basic parts: (1) a sound and honest understanding of one's needs, and (2) willingness to restrain one's acquisitive and consumption behavior in accordance with that understanding. Correspondingly, we can distinguish two ways in which one can fail to meet each of these two conditions. In respect to the intellectual understanding of the boundaries of necessity and sufficiency, one can fall short either by failing to consider the question at all or by failing to think

about the matter correctly. And for one who does manage to succeed at both of these intellectual tasks, she may nonetheless fail to reign in her acquisitive appetite and/or behavior, either because she does not try to or because she has tried but failed. There are, therefore, schematically, four different ways in which one can fall short, by varying degrees, of the virtue of the mean in material acquisition and consumption. In an age in which individuals are constantly subject to powerful forces that conspire to undermine us in all of the four ways, such virtue is a remarkable achievement.

Let us start with the failure to recognize or take seriously the questions of what separates needs from wants: one's own needs from one's own wants. I think it would be fair to think of those of whom this is true as thoughtless, oblivious, brutish, crude and unscrupulous. Such a person is something of a wanton. However, she is nonetheless to be distinguished from the person who, while not as clueless about the general intellectual issues about needs and wants, for one reason or another misapplies these concepts when it comes to their own situation. When thinking about what each of us needs, our reasoning is as often mendacious, superficial, ill-informed and, ultimately, heteronomous as it is otherwise. It is not only natural but tempting, but also fallacious, to infer what we ourselves need either from what others have who are near or around us, either spatially, temporally, socially or culturally, or from what is available. Compounding the situation, increasingly, powerful commercial forces conspire to mislead and misinform the individual about such matters by any means possible. But even for the most alert and sincere, the question of the line between needs and wants is not an easy one. To decide into which category some particular thing falls, one often needs to ask, and answer, deep and tangled questions about what it is we want for ourselves, those we care about, about

our basic values and even about the meaning of life. It is not everybody, and it is certainly not all the time, that we can invest the time and mental energy needed to think these things through.

But even when a lucid intellectual understanding of the issues about necessity and sufficiency, either in general or in respect to oneself, has been achieved, it is usually insufficient for practicing the virtues of frugality, thrift and simplicity. Often, people are just not satisfied with material sufficiency, the state in which their genuine needs have been adequately met. They not only want more, and know that they want more (than they need), most importantly, they also don't have any desire to check those wants. Such a person has, besides her first-order desires, no higher-order ones whose intentional objects are the first-order desires themselves.[242] Subject to no second-guessing or moral scrutiny, her *de facto* desires define her will, which, in the current connection, shape her acquisitive behavior. This individual is also a kind of a wanton, though a different kind of wanton from the one discussed earlier, who pays no heed at all to the theoretical distinctions between needs and wants, and that between sufficiency and insufficiency.

From where might one draw the volitional strength to check those temptations which one not only understands to be mere wants but also believes to be unworthy of satisfaction? To put the question more bluntly, what could possibly serve as the incentive to refrain from doing what we want to do? How we think of these matters depends importantly on one's general conception of virtue. According to the view on which they are analytically linked to the possessor's own happiness or flourishing, we might try to engineer the motivation to check our wants and desires for things we do not need out of

[242] I adopt this language from Harry Frankfurt's "Freedom of the Will and the Concept of a Person," *The Journal of Philosophy*, Vol. 68, No. 1, Jan. 14, 1971, 5-20.

our understanding of what is in our own enlightened self-interest.[243] On this approach, the pain of self-denial in the short-term is but the price one pays for greater, and more sustained, satisfaction in the long-term. The virtues of this approach are self-evident: it is hard to persuade people to give up something for nothing. It is not immoral, but amoral, to ask, of any exhortation to sacrifice, "what's in it for me?" However, there are equally powerful arguments against such strategy. One line of thinking turns its alleged advantage on its head: the weakness of the appeal to enlightened self-interest does not lie in the part about "self-interest", but in the part about "enlightened".

It is often assumed that human beings are necessarily better at, or are naturally more inclined towards, thinking from the first-person point of view, even in long-term, than at or towards thinking from the point of view of another human being or non-human entities. But this seems to me quite without basis either in fact or in theory. People often seem as prepared to make short-term self sacrifices in the interest of another, if only to achieve *instant* psychic gratification by acting on their *immediate* moral *desires*, as they are to make comparable short-term self sacrifices for *their own long-term benefits*, if not more.[244] It is not *prima facie* absurd to think that the contrast between now and later, between the short-term and the long-term, rivals the contrast between the self and others in respect to psychological force. The implication of this for the theory of virtues is that virtues may not have to be tied *analytically*, that is, *by definition*, with the possessor's

[243] I do not refer here to benefit in terms of improved finances, but something logically distinct from it, something that would accrue to the individual even if she had boundless financial resources and is as such invulnerable to ruin however extravagant her spending habits were.

[244] For example, lavishing gifts on friends and family on limited income might be thought of as paradoxical in precisely this kind of way. On the one hand, it seems praiseworthy from the point of view of interpersonal morality insofar as it exhibits generosity, but on the other hand, from the point of view of personal responsibility, it may also, insofar as it is financially imprudent, blameworthy, or at least highly questionable. I don't mean to suggest that it is easy to decide how to assess the logic or the ethics of such behavior. However, it is worth pondering the implications such phenomena have for how we understand human nature and morality.

own happiness or flourishing. So far as the question of the source(s) of the volitional strength needed for practicing the virtues is concerned, there may well be much to be gained from including among them beliefs about their beneficial consequences for *others*. Accordingly, when it comes to persuading people to practice the virtues of frugality, thrift and simplicity, it would seem unnecessary, and unwise, to eschew any appeals to other-regarding interests and concerns.[245]

In fact, it stands to be reasoned, in the Kantian vein, that given the necessarily vicissitudinous nature of personal happiness, impersonal interests and concerns might prove to provide a steadier (though by no means foolproof) moral compass. Lastly, for all intents and purposes, from the virtue ethics point of view, looking past, rather than through, the link between virtues and individual happiness may also prove to have the additional benefit of more effectively inoculating the individual against psychological exploitations by marketers. Commercial interests are seldom served by people not acquiring stuff, and so long as the "advertisement" for the virtues of frugality, thrift and simplicity is predicated on their necessary link with personal bliss, that link is always vulnerable to being co-opted by marketers and to be used for contrary purposes. Rather than general restraint from excessive material acquisition and consumption, personal bliss might be made out to require buying one brand instead of another.

7.5 Notable environmental vices (I): Wastefulness

[245] Indeed, I am inclined to agree with the pragmatists, who say that when it comes to doing the right thing for the environment, we can no longer (if we ever could) afford to be overly scrupulous about the methods of persuasion. We must be willing to use all and any measure we can get or that could work, whether they be carrots, sticks, appeals to reason, appeals to emotion, to the id, the ego, the superego or the super-duper ego. The environment does not care one way or another.

If excess material acquisition is the vice most commonly opposed to the virtues of frugality, moderation, temperance, thrift and material simplicity, it should not be treated as the only one, or perhaps even the most vicious. In this and the next sections I discuss two other distinct, and distinctly environmental, vices: wasteful disposal and physical laziness. Compared with the amount of scholarly attention that has been lavished on the topic of consumption, the issue of society's disposal habits has been subject to only haphazard and superficial theoretical treatment. And for those who expect to find rich and substantive discussions of the phenomenon of wasteful disposal *within* the vast literature based on multi- and inter-disciplinary studies of consumption, one is likely to be disappointed. Physical laziness is, I argue in the next section, an environmental vice in its own right because the disinclination to make use of one's own body and energy to achieve basic functioning necessarily breeds personal dependency on environmental resources.

"Wastefulness" is a generic, and normative, concept. When we judge some practice to be wasteful, it is implied that there is some particular thing that is being wasted, according to some particular norm. Excessive acquisition, sometimes called "overconsumption", is often said to be wasteful. If so, of what and by what criteria? According to the internal logic of the market, so far as goods and services are concerned, buying them up is not to waste them, but to put them to good use. However, if the subject matter is not the goods and services themselves, but rather the natural resources used as input in their production, then excessive consumption would be wasteful, not by the internal logic of the market, but according to the principle of environmental sustainability and the norm of social justice. The natural resource wastefulness of excessive personal

consumption, therefore, is, strictly speaking, derivative of the natural resource wastefulness of excessive industrial production.

But still, the wastefulness in getting too much is not the same as the wastefulness in getting rid of too much. And even though the natural resource wastefulness of excessive personal acquisition is derivative of and made possible by the natural resource wastefulness of excessive industrial production, this does not mean that it matters not, from a moral point of view, in particular the point of view of personal virtue, what individuals do to the goods and services they have acquired. That something has been wastefully produced does not provide justification for its wasteful disposal. Therefore, the question of the ethics of personal relationship to material things can and should be dealt with independently of the issue and even against the assumption of macroeconomic natural resource wastefulness.

To separate out wastefulness in acquisition and wastefulness in disposal, we can begin by getting clear on the different meanings of consumption, a concept that is, contrary to what most scholarly writings on the topic would seem to suggest, neither univocal nor unambiguous. The two most commonly used meanings of the concept of consumption are acquisition (primarily through trade) and direct use. The first meaning is the one used in economics, and is typically the default meaning in scholarly writings on consumption, consumerism and other related topics. Here “consumption” refers to a distinct “moment” in the economic process, and it can be understood formally, as a type of transaction. Crudely speaking, to consume is to buy. A consumer is, quite literally, one who buys what is for sale. Because this sense of consumption is predicated solely on exchange value, it has nothing to say about use value. From the point of view of

exchange value, of economic consumption, nothing is wasted so long as what has (or is endowed with) exchange value is actually exchanged through trade. This is the reason why, when the subject matter is economic output, the notions of *over*consumption, of wasteful consumption (and, for that matter, "wasteful overconsumption") are oxymoronic, since there is no independent reference point external to the act of buying itself from which to judge what is too much, too little, or just the right amount.

There is, thankfully, another sense of the concept of consumption, which is predicated on use value. In this sense to consume means to use directly. For example, to consume food is to eat it; to consume a book is to read it, to consume healthcare services is to make use of them, and so forth. Overconsumption, from this point of view, is when the amount of something used exceeds what is necessary to achieve some intended end, which constitutes the independent reference point external to the act of consumption itself. Eating is not its own purpose, but a means to some other ends, such as growth and health. From the point of view of what is biologically needed for proper growth and good health, it is possible for us both to eat too much in general and too much of something in particular. Overeating is wasteful, as the food overeaten could produce greater utility if either saved for later or given to the truly needy. Now the distinction I wish to make is between the kind of wastefulness exemplified by overeating and the kind of wastefulness exemplified by the disposal of uneaten food as garbage. More generally speaking, the second kind of wastefulness, or liberality in waste disposal, is perpetuated whenever we underutilize things, that is, when we cast useful stuff off as trash, or leave the tap needlessly running, or leave electricity-consuming gadgets on when they are not in use, and so forth.

On the whole, liberality in material acquisition and liberality in waste disposal go hand-in-hand.[246] Still, the two differ in terms of their psychological underpinning. How and what we acquire reflect how we attach (positive) values to things, whereas how and what we throw away reflect how we strip things of value, or how we attach positive value to their riddance. After all, it is because their positive value that we acquire stuff and its perceived lack thereof that we get rid of it. Therefore, the disposition for liberal disposal and for under-utilitzation has two aspects to it: the inability to see positive value in things as such, and the disinclination to do what it takes to preserve, restore and to realize that value. To be wasteful in this way is to be, on the whole, dismissive, disrespectful, perfunctory, belittling, careless, callous, nonchalant and arrogant towards the things in our lives.

An individual's attitudes towards the utilization and the disposal of artifacts are amenable to the same kind of analysis as was outlined earlier for habits in material acquisition (see 7.4). In respect to material acquisition, I tried to argue that the intellectual understanding in matters of needs and wants is best distinguished from our affective attitudes towards this understanding. This distinction, I suggested, allows us to make nuanced sense of degrees of mindlessness or mindfulness in regard to matters of material acquisition. Analogously, with respect to waste disposal, intellectual understanding of the value of things only partly accounts for our behavior, which has also to do with what we decide to make or not make with that intellectual understanding. As it is with failure in understanding the issues about necessity and sufficiency, which I

[246] In her *Waste and Want: A Social History of Trash* (New York: Metropolitan Books, 1999), the scholar Susan Strasser notes how recent an origin our modern habit has, of simply throwing stuff away, because we no longer want it. Until as late as mid-20th century, the social norm with respect to treatment of things *qua* things was to recycle and reuse as much as possible, and final disposal is a last resort reserved for things that have absolutely exhausted their usefulness in any capacity.

suggested might be due either to the failure to consider the question at all or to the failure to think about the issues carefully and properly, those who are genuinely ignorant about the value of things may have similarly failed. Either they are so little experienced in life as to not know what use can be made of things or they are so corrupted and mislead by false ideas on the matter. By contrast, the willingness to discard what one fully recognizes as having use value left in it is indicative of the willingness to subordinate that value to the value of, say, the convenience of not having to assume any stewardship responsibility for the thing in question that would most probably be entailed by *not* ridding oneself of it altogether. Therefore, at least in some of these cases, the disposition for wasteful disposal may be symptomatic of self-centeredness and apathy.

I noted earlier that curiously, as utterly pervasive, thoroughly entrenched, and environmentally significant as the throwaway culture is, it has received scant treatment at the hands of (scholarly)[247] writers on environmental ethics and on consumption.[248] To illustrate this phenomenon, I want to examine in some depth Philip J. Cafaro's promisingly-tilted article, "Gluttony, Arrogance, Greed, and Apathy: An Exploration of Environmental Vice."[249] As we will see, the article has next to nothing to say on the topic. But more important than pointing this fact out is to try to understand how this important

[247] There is no shortage of discussion in the popular press about wasteful disposal in relation to environmentalism. It may be a cliché that green living requires not just buying less but also throwing away less, but this is true. The green motto "Use it up, wear it out, make it do, or do without" perfectly encapsulates the injunction against wastefulness.

[248] See, for example, "Municipal Solid Waste (MSW) in the United States", a book-length document (published yearly by the Environmental Protection Agency), available at http://www.epa.gov/osw/wycd/catbook/what.htm. According to the 2007 report, "the state of the economy has a strong impact on consumption and waste generation. Waste generation increases during times of strong economic growth and decreases during times of economic decline." (13). Also see Phil Simmons, et al, "The State of Garbage in America." *BioCycle, the Journal of Composting & Organics Recycling*, Vol. 47, No. 4, April 2006, 26.

[249] Philip J. Cafaro "Gluttony, Arrogance, Greed, and Apathy: An Exploration of Environmental Vice," in Sandler and Philip (ed), 2005, 135-158.

issue manages to fall into our collective blind spot. My conclusion is anticlimactic: negligence.

I shall begin with Cafaro's discussion of gluttony. First, I believe that he misdiagnoses it as an environmental vice: there is nothing *intrinsically* or *necessarily* environmentally ruinous about individual overeating. So far as food consumption is concerned, it is how a society as a whole produces it that registers measurable environmental significance, that can be called virtuous or vicious. And if a society does this in ways that threaten environmental sustainability, it will matter little if individual members of the society exercise dietary restraints. This confusion may help explain how Cafaro manages to overlook a rather different problem relating to food, that is (1) of monumental proportion in its own right, (2) independent of the problem of overeating and, (3) perhaps most importantly, is directly attributable to the environmentally unsustainable agricultural practices now used in many parts of the world in food production, and in some case (such as the United States), in overproduction. That is the problem of food wastage.[250]

I urge that at the individual level, gluttony may be by far a lesser vice than throwing food away. While there are after all limits to how much food one can waste *through overeating*, there is in principle no limit to how much food one can waste by disposing of it as garbage. Moreover, the convergence of forces such as the (nominal) stigmatization of gluttony, the superabundance and ubiquity of food, and the obsession

[250] See, for example, Andrew Martin, "One Country's Table Scraps, Another Country's Meal," The World, *The New York Times*, May 18, 2008. The article cites reports by the Department of Agriculture and the Environmental Protection Agency, respectively, according to which in 1995, 96.4 billion pounds of the 356 billion pounds of edible food in the United States (which is about 27%) was never eaten, and that Americans generate roughly 30 million tons of food waste each year, about 12 percent of the total waste stream.

about weight may well have converged to produce the unintended consequence of de-stigmatizing, and thereby indirectly encouraging, food waste. But what the vilification of gluttony also misses are the ecologically significant distinctions among different kinds of foods. Especially from an environmental point of view, *what* an individual eats deserves as much attention as *how much* one eats. But the concept of gluttony does not by itself discriminate between, say, vegetables and meats, food that is conventionally and food that is organically grown, corn-fed and grass-fed cows, cage and free-range chicken, imported and locally produced, and so on and so forth. Fixation on quantity alone, therefore, might unwittingly divert attention away from the important issues of food choices on the basis of quality. The environmentally virtuous person, in the area of food consumption, is one who not only refrains from overeating but also refrains from throwing food away, and also chooses wisely among the vast array of options. Cafaro has devoted much of his attention to only one of these three (overeating), barely touches on another (food choice) and is silent on the third.

Cafaro's treatment of greed, the desire for profiteering and for excessive material acquisition, is similarly silent about the issue of waste, and wasteful disposal. For example, while noting approvingly Aquinas's condemnation of the vice of the "hoarding of unnecessary possessions", he does not so much as raise the question of how that compares with throwing stuff away as garbage. While it is indisputable that both hoarding and wasteful disposal are morally worse than moderation and fair distribution, it is worth asking whether, between these two vices, one may be worse than the other, especially from the point of view of resource conservation and pollution abatement. At least in the contemporary context, hoarding does not necessarily condemn something to

eternal uselessness. Hoarded stuff in principle has a second chance at serving somebody's needs in their original capacity if they should ever come out of storage and find themselves at a yard sale or on the Internet. But things disposed of as garbage will in all likelihood end up in the landfill, unless, of course, they are lucky enough – which most of them are not – to be salvaged along the way.[251] If it is true that "in America, [people] are raised to be greedy,"[252] and if greed means seeing value in things and wanting them, it must be no less and perhaps even more true that people are also raised to *not* want things, to *not* see value in them, to take them for granted, to treat them as disposable and dispensable.

The same weakness also besets Cafaro's treatment of arrogance and apathy towards nature. While these vices admit of many forms of expression, some of which (such as corporate malfeasance) Cafaro discusses at some length, wasteful disposal by individuals most certainly constitutes one of them. Yet in failing to recognize, or at least make note of this connection, for whatever Cafaro does say is worth, he nonetheless passes up an excellent opportunity to subject an utterly banal feature of modern life to sorely needed moral criticism, especially through the prism of environmental ethics. Indeed, I would go so far as to say that it is the throwaway way, and not material acquisitiveness, that is epitomic of arrogance and apathy towards nature. However morally bad excessive acquisition may be, it is at least the recognition and affirmation – even if skewed and mislead – of value. It stands to be argued that liberal and facile

[251] Freeganism, or dumpster diving, is a young movement dating back less than two decades that involves people voluntarily living off things they literally find in the garbage dumps. See for example, Steven Kurutz, "Not Buying It," *The New York Times*, June 21, 2007.
[252] Cafaro, "Gluttony, Arrogance, Greed, and Apathy: An Exploration of Environmental Vice," in Sander and Cafaro (ed), 2005, 150.

disposal is by comparison a vice of greater turpitude insofar as it amounts to the total denial, the annihilation, and as such, the holocaust of value.

7.6 Notable environmental vices (II): Physical Laziness

A simple life is necessarily multi-faceted. Restraint in material acquisition and consumption (7.4), and restraint in waste disposal (7.5), are two essential aspects of it. But they must be supplemented by a third, namely, action, or physical activity and the associated attentiveness. Modern life is full of conveniences, courtesy of the plethora of labor-saving – that is, both mental and physical labor – gadgets, technologies and services designed specifically to liberate the individual from not just drudgery, of menial, dirty and tiring physical labor, but increasingly also from jejune and mundane chores and minor hassles. All other things being equal, the more an individual takes advantage of or relies on labor-saving (or "labor-saving") consumer products to perform everyday tasks in meeting needs, the more material and energy she will end up consuming. And one of the key factors that helps to determine a person's level of dependency on these products is the degree to which she is ready, willing, able and determined to *not* depend on them. And in direct proportion to her non-dependency on them, she must be that much more ready, willing, able and determined to make use of her own body and personal energy (both mental and physical, that is) to get things done.

The cluster of vices opposite the virtue of action includes not just laziness and indolence but also ideological antipathy towards or contempt for physical labor, for work that involves the human body. Physical activities have for the most part been held in low

regard since antiquity.[253] Unfortunately, philosophy in particularly, for all its love of the life of the mind, is a prominent source of this very bias. Subject to the laws of not just biology but also physics, the human body is ultimately unfree. While the yearning to break free may be widely shared, the ability to do so is not. This emancipation is achievable in two ways: through the domination of other human beings, or through the use of tools, machines, and energy fashioned from resources extracted from nature. Neither is easily within reach for the vast majority of human beings who have ever lived. As societies increasingly turn away from the first – the most extreme form of which is slavery – dependency on the second way rises accordingly, and inevitably.

Consider eating again. At the macroscopic level, the average amount of time and energy individual members of a society must expend towards procuring food, preparing meals, and cleaning up depends importantly on the system of food production, provision and distribution, all of which are rich in environmental implications. "A hallmark of the Western diet," writes Michael Pollan, "is food that is fast, cheap, and easy." Americans, for example, "spend less than a half hour a day preparing meals." By comparison, "[f]or most people for most of history, gathering and preparing food has been an occupation at the very heart of daily life."[254] But what makes this unprecedented fastness, cheapness and ease with which we are able to accomplish eating possible is the industrialization of food production, food processing and distribution, which, as we now know, has devastating environmental consequences. On the macroscopic scale, shifting *back* to more environmentally sustainable farming, processing and distribution *and eating*

[253] Hannah Arendt, *The Human Condition: A Study of Central Dilemmas Facing Modern Man*, Garden City, Doubleday Anchor Books (Doubleday & Company, Inc., 1959), 87.
[254] Michael Pollan, *In Defense of Food: An Eater's Manifesto* (New York: NY, The Penguin Press, 2008), 145.

practices would on the whole have the consequence of making eating measurably less fast, less cheap and less easy, but also more healthful, than it is now. But still, in the absence of such large-scale changes, even within the confines of the prevailing social context, individuals have some, albeit limited, control over just how fast, how cheap and how easy she is determined to be in feeding herself and her family. And if enough of us are bothered to exercise that control, and in the right directions, our collective preferences may well register with the larger commercial and corporate forces that more often than not call the shots in our national and international economies.

It should not be altogether surprising that alternatives that are more environmentally sound tend to demand more of the individual. To begin with the most obvious, eating food prepared outside the home requires less work than cooking for oneself. Restaurants of all varieties, from the fast to the slow, are wasteful operations, not just in terms of food (in all its life stages, from raw ingredients to table scraps) and energy, but also in terms of eating-related disposable products such as plates, cups, and eating utensils. But different ways of preparing food in the home have different environmental impact and involve different levels of physical activities. The more ready-to-eat or processed one's starting point is, the easier the preparation and the greater the environmental impact of one's meal, owing to the greater material- and energy-intensity of industrial food processing. Cooking from scratch depends less on processed food products, but is also more labor-intensive for the cook. But depending where and how one obtains one's ingredients, cooking from scratch can vary greatly in terms of both environmental impact and labor-intensity. For example, growing one's own vegetables requires a lot more work than buying them from the store. Shopping in supermarkets,

while often more convenient than shopping at a farmer's market or specialty stores, is often the inferior choice from the environmental point of view.[255]

What is true of eating is also true of cleaning and up-keep – another essential part of everyday living – of ourselves, of the things that populate our world, and of our living spaces. Generally speaking, more labor-intensive cleaning methods tend to leave a smaller environmental footprint insofar as they rely less on "labor-saving" industrial products. Hand washing and line-drying clothes may save water and electricity (if done right, of course), but require more labor input. Scrubbing anything involves more exertion than alternatives that involve, say, spraying on some powerful chemical solvent, often with deleterious effects on the environment, and then wiping, rinsing or flushing it away. Old-fashioned push lawn-mowers require more physical exertion to operate than electric, self-propelled power lawn-mowers, but the former's environmental superiority is unmistakable, to speak nothing of its health benefits. Mending and repairing clothes, shoes, bags, suitcases, appliances, furniture and so forth take work, work that one would be "liberated from" if one chose to get rid of the thing altogether. It is easy to either romanticize the simple life, and make it seem tranquil and graceful, and it is also easy to portray it as hard and unmanageable, too demanding on we moderns (or "post-moderns"?) who take the plethora of industrial products for granted. But the truth is somewhere in between (as it always seems to be in many matters): it will likely involve the gradual reintroduction of some of the things we have learned not to do, and not to want to do and

[255] I do not mean to over-simplify the problem. The determinants for the amount of time and energy an individual invests in food procurement and meal preparation are many and mutually-dependent. Many people in the United States are condemned to eating food that is harmful to the health of both people and the environment day in and day out because they face, for different kinds of reasons, no viable alternatives. However, to many others, it is genuinely possible to adopt ways of feed themselves and their family that are more labor-intensive but on the whole less environmentally harmful than their actual practice.

not to need to do, such as the ones mentioned above. A life that includes a larger presence of these activities than is typical, or thought to be ideal now need not be hard, can be interesting, even fulfilling. But it will almost certainly be one that allows us to tread more lightly on planet earth.

In fact, in a world decidedly rigged at every level in favor of the use of disposable products, that is, one in which they are more often than not the default option, deliberate efforts, to say nothing of commitment and discipline, are required to avoid or minimize it. Any measure to that effect – such as packing lunch, traveling with durable drinking vessels, eating utensils, shopping bags, and cleaning them when necessary and repacking them, and keeping them in good shape in general, to name some of the paradigmatic examples – involves labor, both of the mind and of the body. While this may be the standard operating procedure when no alternatives exist (say, for previous generations of Americans and many people today who live in poor countries), it is easy enough for those for whom the alternative is the social and cultural norm to think of these practices as bothersome, as hassles, and to be deterred from taking them up. But of course, this seems to me precisely the reason why the willingness to do so – regardless of whether one might wish, on occasion, that one did not have to – marks one out as genuinely environmentally virtuous.[256]

What is true of eating and cleaning is also true of moving from one place to another. Getting around with one's own body and personal energy is obviously more

[256] Here I should note in passing my disagreement with those, including Aristotle, who argue that the virtues must be pleasurable to practice. I don't dispute that simplicity and frugality may be sources of genuine joy for some, including the environmentally-committed, but there is no reason to deny that the environmentally committed are fully capable of appreciating the immediate personal advantages of *not* having to do certain work. It may be asking too much, both of a genuinely environmentally virtuous person and of an account of environmental virtue, to demand that a genuinely environmentally virtuous person be one who unfailingly acts with nothing but joy. It should be enough, I believe, if one is sufficiently committed to the cause to be able to do what needs to be done willingly and happily *most of the time*.

physically demanding, sometimes even strenuous, than getting around with mechanical help. While it is impractical to choose the former in place of the latter in all cases, say, for long-distance and frequent travels, for some short- and medium-distance travels such as those done in cities, walking, climbing stairs and biking are not infrequently viable and always superior (from both the environmental and the health perspectives) alternatives to driving or riding in elevators or escalators.

In general, the physically lazier a person is, all other things being equal, the more likely they are to have a larger environmental footprint than one who is more physically active. There can be little doubt that a world in which a majority of people got themselves off the proverbial couch, weaned themselves off dysfunctional dependency on labor-saving industrial products, and (re-)learned to engage their bodies in performing daily chores and meeting their basic needs, would be very different from the one we now live in in terms of natural resource consumption and environmental pollution. While I am open to the possibility that such a hypothetical world may also be one in which a large number of the human population harbored romantic sentiments about nature and took up environmentally-themed hobbies, whose theoretical pitfalls I spoke of earlier in the chapter, I remain steadfast in my skepticism that these sentiments and hobbies themselves would or could, in the absence of the kind of a substantive work ethic I have discussed in this and the previous two sections, live up to the expectations that writers of environmental virtues have held out for them in terms of their ability to promote an environmentally sustainable society.

Ch. 8 Conclusion

Different types of macroscopic conditions tend to promote or discourage different kinds of personal traits. A social environment defined by incentive systems so configured as to consistently reward dishonesty and penalize honesty is hardly propitious towards the inculcation of the virtue of honesty. The idealization of the virtues as intrinsically rewarding notwithstanding, when the rubber meets the road, as they say, virtues that are too costly to practice will be, like luxury goods of other kinds, more likely to be appreciated from a distance than actually acquired. Derivative of, but still distinct from its direct environmental impact, a growth addicted society is also harmful to the individual insofar as it erects systematic obstacles to the development of ecological virtues and encourages ecological vices.

One source of obstruction against the *development* of the habits of frugality and simplicity built into the cultural infrastructure of such a society is modern advertising. There is a vast and growing body of academic writing on the subject, attracting critical attention from a wide range of disciplines, including psychology, sociology, history, economics, to name just a few. While I certainly do not trivialize this factor in the dynamics of the social molding of individual character and behavior, my focus in these concluding remarks to the dissertation is a somewhat different. They will concern primarily not a source of obstruction against the *formation* of the habits of frugality and simplicity, or the internalization of their inherent and instrumental values, but a source of obstruction against the *practice* of these virtues. This is a distinct issue from the

psychological impact of advertising because the practice of a virtue requires not just knowledge and volition, but also the right kind of external conditions.

Knowing what is the right thing to do, and even wanting to do it, do not mean that it would be practically feasible, all things considered. While people often enough fail to want to do what they know they ought to, just as often, they are unable to do what they want to (even if or regardless of whether it is also what they ought to do). The choice-worthiness and feasibility of any particular course of action for an agent are importantly determined by the opportunity costs associated with it, which is contingent in part on the external condition. To borrow an analogy from evolutionary biology, the social background defines the selective forces to which individuals of different traits and dispositions are subject. Traits that render their possessors more fit (i.e., more competitive) relative to others in a particular kind of environment will be selected *for*, while, roughly speaking, the opposite would be true of traits that put their possessors at a competitive disadvantage relative to others against certain background conditions. Social forces that tend to compel people to act against their judgment as to what is right (which are, to belabor the point, not to be conflated with social forces that compromise people's very ability to make autonomous normative judgment as to what is right or wrong, good or bad, among which I would tend to include modern advertising) by punishing them when they do in effect exert selection pressures against doing the right thing. They can become a source of alienation and angst for the striver towards moral rectitude. And until and unless we address this issue of the internal dynamics of the macroscopic social environment, and the role the state can and should play in shaping them, it would be unreasonable to demand of the individual to fully achieve the ecological virtues entirely

on their own, through sheer will power (even though it would not be equally unreasonable to demand of the individual to at least try to acquire and/or develop the necessary knowledge and will).

One social force that has just this kind of effect on us relates to the issue of time-allocation. The issue, both familiar and intimate, is this: how do we find the time and the space in our daily lives to practice environmental virtues? This topic of time in particular has not received the critical attention I believe it deserves. In Jerome M. Segal's *Graceful Simplicity: Toward a Philosophy and Politics of Simple Living*, one of the few book-length works in this area, the author points out what living a mindfully and gracefully simple existence necessarily demands of us in terms of our time:

> "Simple living and the harried life are incompatible. Yet for most of us in the contemporary economy, there never seems to be enough time. We rush from one thing to the next, constantly burdened by a thousand tasks on our personal agendas… We live lives that are out of balance, lacking in proportion and moderation. Given the limited time and energy available to us, we have too many things to do."[257]

Time-, energy-, interest-, and attention-constraints are necessary facts of life. As most people know from their life experience, and as economists are fond of reminding us, everything that we do has opportunity costs in terms of gain from something else that we might have done instead. If activities that are meant to generate exchange value have always competed against those meant to generate use value, which should feature prominently in a "doing-it-yourself", materially simple and frugal lifestyle, for people's

[257] Jerome M. Segal, *Graceful Simplicity: Toward a Philosophy and Politics of Simple Living*, (New York: Henry Holt and Company, 1999), 24.

limited time, energy, interest and attention, this tension is more acute the more intense the pressure to escalate material production.[258] Others have observed the patent absurdity of our obsession with speed, which is fundamentally anathematic to the value of environmental sustainability. "Speed," notes Wolfgang Sachs, "is a critical factor in environmental destruction…The rush for higher speeds is a cultural fall-out of the steam engine."[259] There is, therefore, an unambiguous sense in which "the ecological crisis can be read as a clash of different time scales; the time scale of modernity [and of capital accumulating] collides with the time scales which govern life and the earth."[260] So far as personal virtues are concerned, Sachs' suggestion, a powerful one indeed, is that "[w]hatever virtues justice might require in the world of today, the search for selective slowness surely figures among them."[261]

But the environmentally committed and informed individuals, ones who are trying to practice environmental virtues and avoid environmental vices in actions by slowing down in some areas in their lives (those relating to the production of exchange value) so as to be able to become more deeply involved in others (those relating to the reproduction of everyday life, through the direct production of use value) are likely, under prevailing conditions, to find little institutional and cultural support. For many, such a shift is impractical because it would mean either inadequate income to meet basic needs or loss

[258] The economist/sociologist Juliet Schor is but one of many who have documented the enormous demand that a growth-oriented economy places on the workers for their time. See in particular Schor's *The Overworked American: The Unexpected Decline of Leisure* (New York: Basic Books 1992); *The overspent American: Upscaling, Downshifting and the New Consumer* (New York: Basic Books, 1998). Women's en masse entry into the paid labor force that accelerated in the post war period has often been cited as a crucial contributing factor in the general decline of domestic self-servicing. Obviously, to the extent this is empirically true, it nonetheless does not follow that restoration of some of these practices entails reversing the course of women's liberation and gender equality. That would be a false choice.
[259] Wolfgang Sachs, "Wasting Time Is an Ecological Virtue," *New Perspectives Quarterly*, Vol. 4, Winter 1997, 4-10.
[260] Sachs, 1997, 4-10.
[261] Sachs, 1997, 4-10.

of competitiveness in the labor market, and other forms of hardship these might entail, such as loss of access to goods and services of which there may be no or little public provision (e.g., recreational facilities and healthcare). Therefore, the kind of institutional support that would be truly meaningful to these individuals would come in the form of guaranteed basic income, job opportunity and security, universal healthcare, and adequate supply of other forms of the common good, all of which, as I tried to show from different points of view in chapters 5, 6 and 7, require a significant role of the government in managing the economy, in relation to both the issue of optimal scale and that of just distribution. And until other short-term public goods are no longer held hostage to the sheer volume of economic production and consumption, an individual's choice against contributing to the increase of the latter must remain morally dubious, given its negative implications on account of the former.

But such inherent contradictions do more than inconveniencing the individuals caught in them, for a sufficiently inconvenienced individual must in the final analysis be unfree, in a sense that is ethically significant. The notion of freedom that I am appealing to here is for the most part the Hegelian idea of real autonomy, which requires the proper alignment of the will of the individual with the universal will of the state. In *Philosophy of Right*, Hegel contends that:

> "[t]he state is the actuality of concrete freedom. But concrete freedom consists in…that personal individuality and its particular interests…pass over by themselves into the interest of the universal and that, for another thing, they know and will the universal. Indeed, they must recognize it as their own substantial spirit, they must be active for it, as their final aim, so

> that neither is the universal valid and accomplished without particular interest, knowing, and willing, nor do human individuals live only as private persons concerned with their particular affairs."[262]

Hegel rejects the methodological solipsism of Kant's Categorical Imperative and contextualizes the criterion of genuine freedom through direct reference to the social order. According to Rawls' interpretation, "it is only within a rational (reasonable) social world, one that by the structure of its institutions guarantees our freedom, that we can lead lives that are fully rational and good." There are, therefore, two conditions that must be satisfied if an individual is to be free-*in-her-social-world*. First, the background social institutions must be rational/reasonable, and secondly, the individual must be "reconciled" with these institutions.[263] If either condition is not satisfied, the individual is not free, and does not enjoy genuine autonomy, and cannot, on that count alone, live a flourishing life characterized by the pursuit of the rational, the right, and the good.

The keystone criterion for a rational social world is that it must be one that individuals "on reflection can accept and be reconciled to as meeting their fundamental needs."[264] Of course, if acceptance is not to be a foregone conclusion, the reflection required here must not be of a perfunctory nature. It must not take the form of circular reasoning that assumes the acceptability of the social order whose acceptability is what is in question. And the only way this can be the case – that is, the non-circularity of reasoning – is if the individual has some way of formulating their "fundamental needs" independent of the social strictures and reigning ideologies. Only then is it possible for

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[262] G. W. F. Hegel, *The Philosophy of Right*, translated by Alan White (Newburyport, MA: Focus Publishing,, R. Pullins & Company, Inc., 2002), 194.
[263] John Rawls, *Lectures on the History of Moral Philosophy* (Harvard University Press, 2000), 334.
[264] Rawls, 2000, 333.

the individual to properly appraise the extent to which existing political, social and economic institutions function as an effective vehicle for meeting their needs, and for actualizing their freedom.

In the case of the individual committed to living the ecologically sound lifestyle in the world as it is, neither of the two conditions of genuine freedom is satisfied. The social order, defined by its productivist mentality and structural dependence on economic growth is fundamentally irrational/unreasonable, because environmentally unsustainable and unjust. The ecologically informed and committed individual cannot possibly accept the will of such a society as her own. She cannot be reconciled with it, not unless she resorted to contorting her conception of her own needs and fundamental moral commitments. The relatively small number of individuals who are cognizant of this unfreedom and who have suffered from it does not invalidate the normative conclusion here. Obliviousness is not freedom, it is but a testament to the entrenched nature of the irrationality of the existing social order.

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