Economics, Sustainable Growth, and Community

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ABSTRACT: Sustainable growth is emerging as a normative concept in recent work in economics and environmental philosophy. This paper examines several kinds of growth, seeking to identify a sustainable form which could be adopted as normative for human society.

The conceptions of growth expressed in standard economic theory, in the writings of John Dewey, and in population biology, each suggest particular accounts of how the lives of individuals and communities ought to be lived. I argue that, while *absolute* sustainablity is not possible, the latter two conceptions together suggest a regulative ideal of sustainable growth which is acceptable at the social level, and which encourages the development of genuine community.

KEYWORDS: Economics, ethics, sustainable, growth, development

It is surely a good thing to propose *sustainable growth* as a goal toward which societies ought to aspire, since there will be some form of growth in any case. The alternative, quite simply, is *unsustainable*, self-defeating or suicidal growth. Since the 1960s, a number of economists, environmentalists, and philosophers have published works aimed at deterring developed countries from the course of suicidal growth.[1] Yet in spite of so much preparatory critique, it still remains for us to articulate an account of sustainable growth which can serve as a positive ideal for human societies. This paper represents an attempt to outline the basic concepts and issues involved in the notions of growth and development, and to propose a philosophical hypothesis that may guide us in the attempt to articulate a normative account of economic sustainability. Though I will focus only on the core issues here, the present discussion has implications for a number of policy areas including population control, agriculture, energy use, water use, urban design, and others.

It is of course necessary to recognize inherent limits before taking up a task, and one limit to the aspiration for sustainable growth is clear: *absolute* or *infinite* sustainability is impossible in any closed system. As a few unorthodox econo-

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mists pointed out twenty years ago, *any* process of material production renders some amount of previously available material and energy unusable.[2] The Second Law of Thermodynamics, which says that the available energy in a closed system is continuously transformed into unavailable forms until it is dispersed completely, apparently prohibits the ideal of perfect sustainability in any economy. To the extent that the planet is a closed system, human beings and other organisms flourish on a finite margin of low-entropy stock, which they convert into high-entropy waste. Nicholas Georgescu-Roegen states the inherent limit to our aspirations quite simply: "the most we can do is to prevent any unnecessary depletion of resources and any unnecessary deterioration of environment, but without claiming that we know the precise meaning of 'unnecessary' in this context" (Georgescu-Roegen, *Energy and Economic Myths*, 19).

The work of Georgescu-Roegen and others serves as a needed caution about the limits to growth, but we must raise the philosophical question of what *is* necessary when it comes to resource depletion. What is necessary in any situation depends, of course, on what one's goals are in that situation. We are thus led to ask what goal is served by the activities that are depleting our natural resources and despoiling the global environment, and whether there is some other goal or set of goals societies could adopt which would be achieved by means of less damaging practices.

As has been well shown by the environmentalists and economists mentioned earlier, what we in developed countries now do is to live luxuriously on a diminishing stock of *very* low-entropy fossil fuels. This is done for the sake of the almost-unquestioned goal of *maximizing economic growth*, which guides policy in virtually every region of the world. Economic growth is a good thing, we all agree, but often without realizing what economists and politicians *mean* by it. In its fullest sense, it is a double-barrelled phrase, but proponents of economic growth seldom discharge both barrels. The roar of the first barrel is always in our ears: this aspect of economic growth relates to the *quantity* of goods and services produced over a given time. It is represented in the calculated Gross National Product, which is essentially an index of "the physical dimensions of the economic system" (Daly and Cobb, *For the Common Good*, 71). The absence of growth in this sense, we well know, is economic *recession*. There is a widely presumed but questionable correlation between GNP and the well-being of a society's members, so that growth in the physical dimensions of the economy is automatically considered good and recession or contraction is considered bad.[3] Since the level of material production is tied to the rate at which available resources are used, those who call for a reduction in the use of resources have often been accused of opposing economic growth (Georgescu-Roegen, *Energy and Economic Myths*, 19-20). Some have accepted this accusation, only to wonder later what is *missing* from economic analyses that see quality of life entirely in terms of material production (Naess, *Ecology, Community, and Lifestyle*, 110-111).

What is missing is the second component of economic growth, which we may call *development*. This relates to *qualitative* change in the nature of the commodities being produced (Georgescu-Roegen, *Energy and Economic Myths*, 19; Daly and Cobb, *For the Common Good*, 71). It may be accompanied by positive, negative, or zero change in the quantitative component of economic growth. There is *growth* in the economy when we make and use three light bulbs rather than one; there is *development* when we make a new light bulb that provides the same amount of light at one-third the cost. Both are examples of 'economic growth' in the full sense. Only growth registers as an increase in GNP; only development can reduce the strain on resources. Perversely, the expenditure of millions of dollars for equipment and labour to clean up a toxic waste dump is economically 'better' in this paradigm than spending a few hundred thousand dollars up front to avoid creating the mess in the first place, since the clean-up registers as a larger positive contribution to growth. Setting aside such economic ironies as this, however, it is clear that as long as our implicit social ideal is the maximization of economic growth, the current suicidal increase in material production and use of available resources can be expected to continue.

The standard economic conception of growth is susceptible to two kinds of criticism, if it is adopted as normative in a society. The first has just been suggested: it implies an ever more rapid depletion of the stock of resources that make material production possible. It is a short-sighted, self-defeating norm for a society to adopt. The second and less apparent point of criticism is that an individual who adopts the maximization of economic growth as his or her *own* ideal thereby accedes to a seriously distorted view of human life. The economic process as measured in per capita GNP describes the individual rate of "entropic transformation of valuable natural resources (low entropy) into valueless waste (high entropy)" (Georgescu-Roegen, *Energy and Economic Myths*, xiv). The individual who aims to maximize economic growth accepts the pseudo-ethical role of *consumer* as normative. As good citizens of such an economy, our 'official duty' is to consume raw materials in the production of commodities and services, which we then exchange for wealth, which is used to buy commodities and services from others. The highest *socially sanctioned* good in this system is to contribute to the spiralling expansion of the physical economy. Though all would be loath to put it in these terms, the good doctor is then not the one who keeps patients healthy using preventive medicine, common sense diagnoses, and simple remedies, but rather the one who achieves the *same ends* via the most resource- and labour-intensive tests and treatments.

Daly and Cobb have revived the distinction between *economics* and *chrematistics* that Aristotle made in dismissing this way of life as ethically inadequate (Daly and Cobb, *For the Common Good*, ch. 7). Economics is the art of managing a household so that needs are well-met over the long term. This of course involves the production and use of commodities and money. Chrematistics is the way of life that makes material production and the accumulation of wealth

the highest good (*Politics* 1256a11). Aristotle points out that wealth (and we may include here the whole sphere of material production) is only an instrumental good, a means for attaining some other good (*Nicomachean Ethics* 1096a6). The life of the chrematist is thus essentially *incomplete* and *not natural*, in the sense that one would make the acquisition of money and commodities the highest good only if forced to do so by circumstances. Aristotle perhaps had in mind that one might temporarily act as a chrematist if bad fortune had destroyed one's personal economy: in this case, one would embrace chrematism as a means to restoring the material basis for household life. To adopt the accumulation of wealth as an end in itself, however, represents a distortion of human life. A near-universal and unquestioned political policy of maximizing economic growth can drive us unawares into this 'non-natural' way of life. As a normative concept, maximization of material growth falls far short of the best we can do: it places individuals in ethically unfulfilling roles, and sets societies on a collision course with resource depletion. It is the very antithesis of the 'stationary' or 'steady-state economy', the normative concept proposed by Mill and later theorists as the basis for sustainable growth.

Georgescu-Roegen is rare among economists in pointing out that there is *more* to economics than the material side of the process. In a passage worthy of Aristotle, he writes "The true product of the economic process is an immaterial flux, the enjoyment of life, whose relation to the entropic transformation of matter-energy is still wrapped in mystery." (Georgescu-Roegen, *Energy and Economic Myths*, xiv.) The key to defining a form of sustainable growth lies in turning the emphasis away from growth of material production and toward the enjoyment of life, well-being or (in Aristotle's language) *eudaimonia*. This change in value priorities is the "shift in basic attitudes from the dominant paradigm in leading industrial societies" that Arne Naess has insisted upon as necessary for mitigating the environmental crisis (Naess, *Ecology, Community, and Lifestyle*, 68). Naess' distinction between 'the shallow and the deep, long-range ecology movement' is of course well-known (Naess, *Ecology, Community, and Lifestyle*, 27-28). The shallow movement seeks short-term *fixes* for specific problems of pollution and resource depletion, while the deep movement seeks nothing less than a new way of living that would lead us to *eliminate* the sources of such problems. I stress again that pollution and resource depletion are inevitable side-effects of *any* economy. They can be significantly *mitigated*, but not *eliminated* so long as there is life on earth. The most extreme aspirations of deep ecology, to eliminate or even reverse environmental degradation, are impossible. Again, we must ask what instances of resource depletion and environmental deterioration result from activities that are truly necessary for our life and well-being, and tolerate only those.

It is unfortunate that the call to eliminate environmental degradation has been the most prominent aspect of the deep ecology movement, since it has provoked a critical firestorm in which the truly important message has been overlooked.[4]

The best in environmental philosophy goes beyond discussions of environmental problems, to the fundamental questions of ethics, of how we ought to *live*. The environmental crisis has been a catalyst in reviving concern about ethics, and specific environmental problems have provided an urgent practical context in which discussions of values nearly always come to the fore. To this extent, what is deepest in the environmental movement – the serious consideration of ethics – is only incidentally associated with environmental concerns. Some other catalyst might have brought it to prominence. However, the link with environmental thought is uniquely fortuitous for ethics. As a few contemporary thinkers familiar with both environmental science and philosophy have come to realize, the ecological perspective can provide valuable insights for ethics.[5] We now turn to a view of the good life which draws upon insights from both philosophy and ecology. The philosophical hypothesis mentioned earlier is simply that ethics can derive principles from ecology without committing the so-called 'naturalistic fallacy'. The view of the good life that I articulate provides the basis for an idea of sustainable society, a society whose goals contrast sharply with the received conception of economic growth.

SUSTAINABILITY AND DIVERSITY IN ECOLOGY, ETHICS, AND ECONOMICS

The following discussion proceeds by first attending to John Dewey's account of the *individual growth* involved in the enjoyment of life that is the true end of the economic process. We then consider how this conception of growth is manifest at the social level. *Diversity* and *sustainability*, principles central to ecological thought, are shown to be key components of the notion of sustainable growth that we seek to define. Ethics and ecology thus provide the basis for a *political* conception, in Aristotle's sense of 'the political' as that which concerns the good of the community.

Dewey describes the life of the individual in terms of continuous transaction with one's surroundings: "Life itself consists of phases in which the organism falls out of step with the march of surrounding things and then recovers unison with it – either through effort or by some happy chance." (Dewey, *Art as Experience*, 19.) If we can identify a highest ethical good in Dewey's philosophy, it must be the *growth* that can come about in the course of these transactions with the world. Change is inevitable in any life, but growth in the richness of experience is the most desirable form of change.

This begs elaboration: what Dewey objects against, above all, is the routine, *boring* quality that infects much contemporary life. We all from time to time find ourselves pronouncing this judgement on our own lives. A common remedy for boredom is to engage in something exotic, whatever that may mean for us – a new suit, a drinking binge, random violence, or (my favourite example) Larry

Walters' Ascension: one fine day in California, Mr. Walters floated to 16,000 feet in a lawn chair harnessed to 42 helium-filled weather balloons ("A Decade Outside," 38). The exotic experience is not a lasting solution to the problem of a mundane life, however. Walters descended by popping his balloons with a pellet gun, only to be cited by Federal Aviation Administration bureaucrats for violating restricted airspace. Dewey mercifully sought a less exotic way for us to rise out of our ruts.

The key is in the *way* that we interact with our surroundings, and adjust to the give and take of events. Boredom sets in when our efforts are narrowed to dealing with the bare minimum of physical needs and the necessary routines of what comes to be seen merely as 'a paying job'. In other words, a life focussed on the *mere* processes of entropic transformation – the production of income and commodities – is hardly *life* at all. This form of production is a necessary part of life, but it is not the true end of life, or of the economic process. That end, Dewey suggests, involves a mode of production that registers not as *material* transformation, but as affective, *qualitative* transformation of what is experienced. We often speak of commodities as useful, but seldom ask what they are useful *for*. Very little of what is produced is useful for basic physical needs. Some 'necessities', like collars and neckties, or high heels, frankly involve physical *disutilities*. Dewey points out that "The characteristic human need is for possession and appreciation of the meanings of things," and that we have a corresponding capacity to *produce* meaning in experience (Dewey, *Experience and Nature*, 272). This capacity *can* accompany our production of commodities, but it is often neglected, suppressed, or otherwise missing.

Basic physical needs must be met, of course, and this is the most fundamental function of the economic process. As I have pointed out elsewhere, the first order of business is always to provide a habitat that is literally non-toxic, one that is adequate to the basic human needs for food, water, air, and so forth.[6] It is a shocking fact that people in many parts of the world lack even these basics. It is even more shocking that the relatively small number of people residing in developed countries, people whose basic needs are met more than adequately, are the ones responsible for most of the resource depletion and environmental degradation that currently threatens us. Environmental strain, in short, results largely from the activities of those who have the *least* apparent reason to overstep nature's carrying capacity. On its face, this is a puzzling situation. It arises because we require more of life than simple sustenance. Beyond mere adequacy of a habitat, we desire a good life within that habitat – and this is a fact that any account of sustainability must take into consideration. A great deal of present environmental destruction results from misguided efforts to live well. The problem lies not in aspiring to a good life, but in what we take to *be* the good life and in what we do to attain it.

Dewey's observation of the central importance of meanings for human life provides the key to a diagnosis and a prescription for those of us who live in the

developed countries. The diagnosis is that our problems arise from a confusion about the kind of growth that actually promotes well-being: we seek to attain a good life through growth in the physical scale of the economy, when we ought properly to seek it in the growth of meaning. What society ought to encourage is not growth in the size or physical complexity of our habitats, but growth in their significance. Just as economic development can occur with or without quantitative growth, significance can accrue to a habitat with or without quantitative physical change. Given the present strain on resources, citizens of developed coutries would do well to explore and promote those ways of increasing the significance of their habitats, and of their lives, that do *not* involve inordinate use of physical resources.

It is a bit of wisdom as old as philosophy itself that the acquisition of *things*, once basic needs are met, does little to improve the quality of one's life. Many boring, empty lives have been lived in mansions and palaces. Whether we find ourselves in a mansion or a shack, what is actually necessary to 'escape the rut' is to learn to see that, in its infinite richness of particular detail, our 'ordinary' experience really is no rut after all. If we will only pay attention and cultivate the significance of each action, what we discover is a continuous rhythmic give and take, an 'immaterial flux', in Georgescu-Roegen's phrase, between ourselves and what is around us. Ordinary experience, in short, is charged with the potential for rich aesthetic significance: "The live being recurrently loses and re-establishes equilibrium with his surroundings. The moment of passage from disturbance to harmony is that of intensest life." (Dewey, *Art as Experience*, 22.) The "only distinction worth drawing" between kinds of activity, Dewey says, is "between those modes of practice that are not intelligent, not inherently and immediately enjoyable, and those which are full of enjoyed meanings," which are suffused with drama and a sense of epiphany (Dewey, *Experience and Nature*, 269). An intelligent appreciation of the internal drama of experience will lead us to discover that *all* our lawn chairs are, in a sense, suspended 16,000 feet up in somebody else's airspace.

There are valuable insights in Dewey's account of life, as well as some problems. The great strengths of Dewey's account are two. First, it collapses the barrier between *means* and *ends*. Any activity can be seen in the context of the whole ongoing organism-environment transaction as a *unity* of means and end. Somewhere in a Chautauqua (which many persons now doing academic philosophy have read, but will not admit to having internalized) Robert M. Pirsig reports his friends' shock when he suggested that assembling a barbecue grill, clearly a means to cooking dinner, could be experienced as an intrinsically significant act of *sculpting*. Any activity that integrates means and end into one experience *is* art, according to Dewey (Dewey, *Experience and Nature*, 271). The second insight is that humans simultaneously produce two different sorts of things in interacting with their surroundings: we produce material commodities and services, and the meanings that come attached to them. *Growth* in the broadest

sense occurs when in the course of adjusting to the ups and downs of life, satisfying our needs, we become more adept at *both* modes of production, when doing so *is* art (Dewey, *Art as Experience*, 20). Growth, for adult humans, is primarily growth in terms of *meaning* rather than in terms of *physical change*. The significant effects of an education, for example, do not register in the per capita GNP. Now any meaning is associated with some object, so growth in meaning cannot be entirely separated from material production. Folk wisdom is right: a house is not a home. A home, though, presupposes a house of some sort in which the system of meanings that makes it a home are embodied.

Growth is the true end of human life, in Dewey's account, but he provides very little guidance for specifying what *kind* of growth is preferred. Here lies both a strength and a weakness in his work. The strength is his thoroughgoing pluralism. Some actions promote growth in the individual at the expense of others, or at the expense of the long-term possibility for further growth. Atrocious or merely unkind acts can be denounced on this count, and so he is not the radical relativist some think he is. Aside from the obvious ethical wrongs, though, Dewey leaves the field wide open as far as individuals are concerned. A diversity of pursuits within society, aiming at diverse ends, is the best guarantee that routine and conformity will not tyrannize and stifle our lives.

The principle of ethical pluralism has an analogue in ecology. An ecosystem is comprised of a network of complex relations among widely diverse species. In a healthy system, a species need only find a niche to become an integral part of the whole. Moreover, a diverse and complex polycultural system (like a prairie) is far less vulnerable, as a system, to disease or drought than is a simple monocultural system (like a cornfield). A society and its members likewise benefit from diversity, as Aristotle insisted (*Politics* 1261a17). They stand at risk in what a friend has called 'moral monoculture'.

Pluralism is a sound principle, but a community that emphasizes *only* diversity is no community, as Aristotle also observed (*Politics* 1260b40). The weakness in Dewey's thought, as many have noted, is that it may not be adequately normative. In adopting his ideas, we need a regulative principle to balance the principle of pluralism. I propose to extend the analogy between ecosystems and ethical systems a bit further, and suggest that sustainability is the principle that would naturally balance the principle of diversity in a community. Humans have an advantage over ecosystems. We can *decide* which ethical principles we will adopt to govern our cultural life; the members of an ecosystem do not choose the principles which govern their physical life. I only suggest that we try modelling our *ethical* principles on the *ecological* principles that govern the physical life of natural communities.

It might be objected that this strategy commits the so-called naturalistic fallacy, that to base ethics on principles observed to operate in the natural world is a naive derivation of an 'ought' from an 'is.' In dealing with this objection, I will briefly consider three ways we might view the relation between ecology and

ethics in the present context. While all three have merits, it is the third which I take as the legitimate justification for transporting the principles of diversity and sustainability out of ecology and into ethics.

The first strategy the ethicist might adopt so as to avoid the naturalistic fallacy is to deny that there is any connection, other than an analogical one, between the two spheres of inquiry. The observation that the principles of sustainability and diversity operate in healthy natural communities merely provides a starting point for a thought experiment in ethics. The ethicist sets out to discover what application these principles might have in the context of human social relations, and completely rethinks the concepts in the process. They may well be altered in the process so that they scarcely resemble the original ecological principles. In fact, this alteration seems likely since there are some considerable differences between natural and human communities: the life of an individual is typically valued more highly in a cultural system than it is in a natural system, for example.

This approach is cautious not to *presuppose* any parallel between nature and culture, and so avoids the naturalistic fallacy. I believe that this is indeed where the ethicist should start the inquiry, but I do not believe that this is where it should end. Once the analogy has been taken up, it should become clear that there is more than an analogical connection between these ecological principles and their ethical counterparts. At the most apparent level, we must recognize the fact that human or cultural communities are indeed subject to the same kinds of limiting factors as are natural communities. A human population, like a rabbit population, cannot survive if it overshoots the carrying capacity of its habitat or if it becomes too homogeneous. This is well-known, of course, but it is a point that bears repeating. It would not even count as an assertion of *ethics* except for the fact that we do have the ability (and perhaps even a tendency, if Garrett Hardin is right) to act in deliberate violation of these natural laws.[7]

The philosophically interesting applications of the principles of sustainability and diversity arise in the more clearly cultural realm of human life, however. The tough questions have to do not with whether we ought to provide for continued adequacy of our collective habitat, but with how we ought to go about producing a significant habitat. It might be said that this is the whole function of the cultural aspect of human society, as distinguished from its basic natural aspect. I argue that there is good reason to apply the principles of sustainability and diversity to this side of human life, as well – to the questions of what people in a community ought to be encouraged to do, and what they ought to be discouraged or even prohibited from doing.

We thus arrive at the second view the ethicist might take concerning the relation between ethics and ecology. One might posit a strong parallel between principles of ecology and ethics on the basis that communities are communities, and we ought to suppose that the same principles are operative in all systems alike. While I have argued that this is indeed true where we are considering basic physical limitations and requirements for a population to survive, it is not at all

clear that one can justify the transition from this level to the consideration of activities beyond those necessary to survival. It is at this level, however, that ethics has the most to offer. Unlike the first view, which is a good starting point but which ultimately appears incomplete, this second view is one which is best abandoned as simply mistaken.

The mistake lies in the justification for supposing that the same principles operate in all social systems, whether natural or cultural. This view presupposes, in short, that communities or social systems share an essential nature defined by their purpose, and that this accounts for the applicability of the same principles governing their operation. Aristotle's biologism points in this direction, though I want to emphasize that this account is not meant as a characterization of his thought. It is doubtful that anyone would seriously maintain that there is an essential similarity between the ends of human cultural life and the ends of a natural community such as we find in the Alaskan tundra or a Brazilian rainforest. The greatest difficulty comes, of course, in making sense of the idea that a natural community has a purpose in anything like the same sense that most systems of human association do. Another difficulty arises when we try to specify the purpose of human culture in general. The idea of natural purpose is simply too alien to modern thought to be helpful here. I reject this second view of the relation between ecology and ethics simply because we have no good way to justify the presupposition of an essential similarity between natural and human communities, beyond the level of physical limitations and requirements. The second view, in this crude form at least, does appear to commit the naturalistic fallacy.

We come next to the third view of the relation between ecology and ethics, the view I advocate. The lesson of the first view is that we want to find more than an analogical or fortuitous relation between the two spheres of thought. The lesson of the second view is that we need an alternative to the idea that there is an essential, objective similarity at work; furthermore, it appears that Aristotle's emphasis on natural purpose, on the proper ends of things, is very close to what we seek. The whole point of this digression, of course, is that we want to show that no naturalistic fallacy is involved in importing the ecological principles of diversity and sustainability into ethics. What we must recognize is that *diversity* and *sustainability* are already normative concepts when they are used in ecology. If a scientist notes that a population is 'too homogeneous' or that it 'exceeds the carrying capacity of the habitat,' a value judgement has already been made. These are not merely observations of facts – they are observations of facts which carry the force of judgement. The scientist notices whether a population is diverse or sustainable because these are the key factors in evaluating the population's prospects for healthy continuance. It is not that all natural communities are diverse and sustainable – it is that we have learned to recognize these factors as signs of *healthy* communities. Health is the key normative concept at work in observations that employ the principles of sustainability and diversity,

and it certainly applies to our observations of the state of our own human society. The problem to be addressed now is that of determining how the notion of health applies in the ethical sphere, when we are evaluating our own social systems.

In a *merely* pluralistic society, one way of life may well destroy the conditions that make other ways of life possible. In an ecosystem, such a species would be a plague species, an exotic which destroys the ordered network of relations that sustains the original unified system (Evernden, *Natural Alien*, 109-110). Unless a new sustainable balance emerges, the system will perish. With Dewey's ethics, as it stands, there is nothing we can say to dissuade the dedicated chrematist, the consumer of resources. This is especially so if such people find their activity to be genuinely significant, if they are producing meanings along with their vast output of commodities.

If we introduce sustainability as an ethical ideal complementing diversity, though, such ways of life can at least be discouraged. The best mode of discouragement, of course, is to offer some better way of life as an alternative. A diverse community aiming at sustainability can discourage chrematistic practices which undermine sustainability, by deliberately cultivating the affective richness of individual experience which its very diversity makes possible. As was noted earlier, a community can seek to maximize the growth of *meaning*, rather than of material production.

The kind of community this change in priorities could be expected to promote is that which thinkers like E. F. Schumacher, Wendell Berry, Wes Jackson, Arne Naess, and even Gandhi have long urged. This is not the place to consider the myriad details that would go into building such communities. I will only provide a few quick sketches, to remind us of a perhaps forgotten image. It would be a community founded upon direct communication among people, in which education and intelligent thought are prized above material status symbols. Its members consequently might come to be regarded by their leaders primarily as *citizens* rather than as *consumers*. They would come to see themselves as vital members of democratic publics, rather than as occupants of generic roles defined by impersonal organizations. Material production would be sustained by 'intermediate technologies' designed to meet the needs of *humans* rather than of the GNP. The use of abundant and renewable 'medium-entropy' fuels (solar, wind, and bioenergy sources) would be preferred over the use of increasingly scarce, very-low-entropy fossil fuels. Our cities and rural areas might come to be populated with people living in homes and neighbourhoods, rather than in mere houses and subdivisions. This is surely a better alternative. Our best hope for realizing it may well lie in local implementation of policies guided by the ethics of diversity, sustainability, and community which I have sketched here.

NOTES

An earlier version of this paper was presented at the Central Division meeting of the American Philosophical Association on 26 April 1992. The author wishes to thank Prof. Steven Vogel of Denison University for the response paper he read at that meeting.

[1] It is worth noting that the idea of a sustainable economy is well over a century old. In *Toward a Steady-State Economy* and in *Economics, Ecology, Ethics: Essays toward a Steady-State Economy*, Herman E. Daly traces the economic principle of sustainable growth to John Stuart Mill's *Principles of Political Economy* (bk. IV, ch. vi) the first edition of which appeared in 1848. In *For the Common Good*, Daly and John B. Cobb, Jr. offer perhaps the most devastating critique of the current economic commitment to suicidal growth so far articulated. Daly and Cobb's work provides the point of departure for much of the discussion in this paper.

[2] The economist whose work most directly informs the present discussion is Nicholas Georgescu-Roegen, in *Energy and Economic Myths, The Entropy Law and the Economic Process* and *Essays in Analytical Economics*. Among others who have articulated the same notions we may list Herman E. Daly, Jeremy Rifkin, Kenneth Boulding, Amory Lovins, Wendell Berry, and E. F. Schumacher.

[3] Daly and Cobb examine the supposed correlation between well-being and the GNP in detail in chapters 3 and 19 of *For the Common Good*. They describe a proposed alternative means for measuring well-being, "The Index of Sustainable Economic Welfare", in an appendix to *For the Common Good*.

[4] See Fox, *Toward a Transpersonal Ecology*, ch. 2, for an outline of the published furore over deep ecology.

[5] See, for example, Wes Jackson, "How to Avoid Building Pyramids", in *Altars of Unhewn Stone*.

[6] In "The Values of a Habitat", as in the present discussion, I distinguish the *adequacy* of a habitat from its *significance*.

[7] See Garrett Hardin, "The Tragedy of the Commons".

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AGRICULTURAL ETHICS

A multi-disciplinary conference on agricultural ethics entitled, "Decision Making and Agriculture: The Role of Ethics," will be held at the Nova Scotia Agricultural College, 20-22 January, 1994. Speakers include Paul Thompson, Frederick Buttel, Bernard Rollin, Frank Hurnik, Larry Haworth, Conrad Brunk, William Heffernan, Tony Winson, and Charles Blatz. There will be four sessions on the following topics: animal welfare, agricultural research, Canadian and U.S. agricultural policy, and building an ethical framework for agriculture. Each session will also include Agriculture Canada, farm lobby group and farm speakers. For more information, please contact Mora Campbell or Ralph Martin at (902) 893-6600.

ECOLOGISTS AND ETHICAL JUDGEMENTS

A symposium on Ecologists and Ethical Judgements will be held at INTECOL VI, International Congress of Ecology, Manchester, England from 21-26 August 1994. The audience will consist mainly of practising scientific ecologists who want an overview of the main ethical debates around the application of the science they practice (i.e. more or less environmental ethics) and the ethics of their own daily work (largely a new field). Papers and posters are invited: for further details please contact Revd N.S. Cooper, The Rectory, 40 Church Road, Rivenhall, WITHAM, Essex CM8 3PQ, UK.