



“Summary of article by David Pearce: Foundations of an Ecological Economics” in Frontier Issues in Economic Thought, Volume 1: A Survey of Ecological Economics. Island Press: Washington DC, 1995. pp. 58-61

Social Science Library: Frontier Thinking in Sustainable Development and Human Well-being

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Ecological economics, with the objective of creating a sustainable society, should employ a Rawlsian concept of distributive justice in an intergenerational context as one of its principal foundations. This concept can apply to non-human species also, however, it is argued that the biophysical requirements of a sustainable society are likely to ensure the preservation of non-human species and habitats. The present forms of economic organization can be examined to test whether they can guarantee sustainability. The conclusion is that none of the existing forms of economic organization can adequately guarantee sustainability, and we should begin to investigate the conditions for an economy that is "ecologically bound."

Justice as Fairness

In 1971, John Rawls outlined a theory of justice concerned with intratemporal fairness. Rawls argued that a set of moral principles pertaining to justice would best be derived under a "veil of ignorance" about the location of individuals in society (whether they are rich or poor). In this context, a principle of justice is "derived from rational life plans, some knowledge of how society functions, and some knowledge of the relationship between life plans and primary goods."⁽¹¹⁾ From this principle of justice, rules for the organization of society are derived. When these rules are institutionalized, each person will have equal rights to the maximum amount of freedom possible without infringing upon the freedoms of others. When inequalities arise, these inequalities can only be justified if they are potentially advantageous to everyone. This difference principle is the equivalent to the MAXIMIN principle which implies that each person will opt for the maximum amount of protection possible to avoid the risk of being the poorest person in the society.

Intergenerational Justice

Talbot Page has expanded Rawls' intratemporal theory, which shows how to define justice within a given generation. Page's contribution gives us an intertemporal theory that takes account of issues of justice between generations. In his formulation, one of the tenets added to the Rawlsian "veil of ignorance" is an ignorance of what generation the decision maker will fall in. In this context the MAXIMIN principle will ensure that future life will be possible because no one will want to put himself in the last generation. Page has argued that this notion suggests a "permanent livability" criterion which implies that the natural resource base on earth will be kept intact, and that all generations will have equal access to that natural resource base. Page distinguishes natural resources from primary goods. Natural resources are seen as an endowment that helps determine access to primary goods. As time passes, if the natural resource endowment

changes between generations, so will the primary goods, and this can only be justified if future generations benefit by this inequality.

Page's extension of Rawls can be criticized on the grounds that in the intratemporal case, all the parties are alive, but in the intertemporal case we are asked to make judgments concerning individuals who do not yet exist. In addition, Page's statement that inequality in resource use is unjustified can be countered by the argument that the conversion of resources to capital in the present can be justified by the capital itself being passed on to future generations.

These criticisms are based on standard intertemporal efficiency conditions that can conflict with intergenerational justice. Such conditions state that each generation should maximize the present value of net gains. However, if, for example, the discount rate that is being used is higher than the regeneration rate of a resource, the resource could become extinct and future generations would not have access to it. Thus an intergenerational justice principle is more likely to ensure equality of resource base endowments by generation.

When comparing Page's notion of "permanent livability" to contemporary conservationists' notions of "sustainability," we find that the two are virtually identical. Sustainability is linked to intergenerational justice.

Justice and Non-Human Species

It seems difficult to consider non-human species within this intergenerational context because they cannot assemble to debate the rules on which to form a society. However, these beings are sentient, and it can be argued that they have preferences. They are similar to humans in many ways; for example, like humans we know they experience pleasure and pain. Perhaps because of such similarities, an extended theory of justice could see humans as stewards of non-humans, as is widely discussed in environmental ethics literature. Nonetheless, for our purposes we do not need such a concept of justice for non-humans because intergenerational justice implies sustainability, sustainability implies the observation of biophysical constraints, and observation of biophysical constraints implies a general non-elimination of species.

Sustainability and Biophysical Constraints

In order to achieve sustainability, each generation must have equal access to the natural resource base. However, at any depletion rate of nonrenewable resources it is impossible for the resource base to be equal across generations. As a solution, Page argues that the use of a severance or depletion tax, imposed in proportion to the rate at which resources are depleted, will be an incentive for substituting renewable resources for exhaustible resources, as well as increasing the efficiency of use for those resources that are consumed. This analysis is flawed because it "assumes that real resource prices are reasonable indicators of resource scarcity."⁽¹⁴⁾ Two other approaches regulated by the laws of thermodynamics can serve as satisfactory alternatives. First, the amount of renewable resources extracted should never exceed the rate at which the earth replenishes these resources unless substitution with other renewables is possible. Second, wastes should not be emitted at levels that exceed the earth's capacity to absorb them.

Economist Kenneth Boulding reminded us of the First Law of Thermodynamics, which says that matter cannot be created or destroyed. In an economic context this implies that whatever is extracted from the environment will return as waste. Thus the rate of resource extraction is limited by both the absorptive capacity of the earth's environment and the rate of regeneration. The economic implications of the Second Law of Thermodynamics have been outlined by Georgescu-Roegen. This law states the impossibility of total recycling, which is prohibited because of entropy. The phenomenon of entropy, in the context of sustainability, emphasizes the rules pertaining to the absorptive capabilities of the earth's environment, because the extraction of resources in their low-entropy states leads to the emission of high-entropy waste, which it is difficult for the environment to recycle. Thus, wastes should be emitted at or below a level that the environment can absorb.

Economic Society and Sustainability

We now need to discuss whether existing economies (free market, mixed, planned) have any mechanisms for achieving and maintaining sustainability. Truly free market and truly planned economies do not really exist in the world, so we will discuss modified market economies and modified planned economies.

Modified market economies tend to deal with environmental problems by regulating pollution and resource depletion through polluter and depletion taxes. In actual fact, many economies regulate pollution but encourage resource depletion. This reflects the conventional lack of understanding of the linkages between resource use and waste disposal. Modified planned economies, in which environmental externalities are supposed to be accounted for in the planning process, assume that the environment is something that can actually be controlled and planned by humans, ignoring strict biophysical constraints.

Neither economic structure has built in mechanisms for sustainability. For a modified market economy to be sustainable, the public sector would need to operate planning procedures within ecological constraints, and prices would have to somehow incorporate the overall objective of sustainability. For a modified planned economy "it would be necessary for the planner explicitly to acknowledge the biophysical constraints and to secure planning objectives only within those constraints."(17)

Finally, "sustainability as intergenerational fairness" can not be achieved through the conventions of planned, market, or mixed economies. We must strive to define and develop an economy that is "ecologically bounded," with "sustainability as intergenerational fairness" as the foundation for such an endeavor.