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THE CASE FOR STRONG SUSTAINABILITY

by Konrad Ott

1. Introduction

Regretfully, both scientists and political agents use the umbrella term ‘sustainable development’ in an increasingly indiscriminate and arbitrary way. The politically most influential concept of ‘sustainable development’ in Germany is the three-pillar concept. It demands that we should equally consider economic, social, and ecological development. Initially, it improved the footing of environmental concerns and helped to reconcile concerns that were formerly thought contrary. However, the results of several research projects demonstrate that the three-pillar model has been reduced to a listing of any societal objectives that agents happen to think important.¹ But for logical reasons, any concept that encompasses very much (*extension*) must lose specific meaning (*intension*). If so, we should try to overcome the three-pillar model, i. e., integrate it into a comprehensive theory.

For greater clarity on the pathway towards such a theory, it seems helpful to distinguish spheres or layers of the overall debate on sustainable development. Döring & Ott (2001) propose the following model:

- (1) Idea
- (2) Concepts
- (3) Guidelines (resilience, sufficiency, efficiency, etc.)
- (4) Dimensions (environment and nature, social systems, economy, education, culture, etc.)
- (5) Management rules in single dimensions
- (6) Objectives (targets, time frames, set of instruments)
- (7) Indicators
- (8) Implementation, monitoring, etc.

2. *The Idea of Sustainability*

On level (1) and at the starting point of theory formation is the ethical idea of sustainability. It is based on obligations toward future generations and presupposes intergenerational equity (see Chapter 6). Most ethicists would agree to a definition similar to this: *Sustainability means that present and future persons have the same right to find, on the average, equal opportunities for realising their concepts of a good human life.* The definition combines an intergenerationally extended right-based morality ('same right') with a broadly defined teleological objective ('good human life'). Accordingly, sustainable *development* is development that reaches or maintains a sustainable *state*. This straightforward definition avoids the many confusions that result from the murky notion of development. Technological improvement and economic growth are components of sustainable development only if they contribute to a sustainable state.

At the core of my argumentation on this level is a Rawlsian 'veil of ignorance' (see Chapter 6.4d). Let us, again, imagine that we are a group of rational, free persons behind the veil and argue about which concept of sustainability we should choose.

As quoted in Chapter 6 (page 48), Rawls identifies three basic principles of justice. The *basic-liberty* principle and the *equal-opportunity* principle are both lexically prior to the so-called *difference* principle. It says that social and economic inequalities are partly justified if they are 'reasonably expected to be to everyone's advantage'. What this may mean is open to interpretation. For three reasons, Rawls argues in favour of an egalitarian interpretation that he labels 'democratic equality': *First*, he is deeply convinced that contingent facts of life that impair an individual's prospects should be compensated for in a just society. *Second*, his pre-analytic vision of justice is egalitarian. *Third*, there are good

reasons to expect that rational persons are to some degree risk-averse. Accordingly, the difference principle implies that, as rational persons, we should decide to maximise the good at the lowest 'normal' social position, i.e. that of an unskilled worker. When applied in risk evaluation, the difference principle takes the shape of the 'minimax' criterion (see Chapter 6.5c). I hold that the rational persons behind the veil will, indeed, adopt at least such a rule of distributive justice.² After having agreed upon a *concept* of sustainable development, they may institute even more strictly egalitarian principles (e.g. limited inequality of income³) if they think that these are necessary for its implementation.

Rawls himself asked what a fair intergenerational saving schedule would be. The concept of a saving *schedule* makes more room for environmental concerns than the economically more restricted concept of a saving *rate*. However, Rawls did not distinguish rate and schedule as sharply as I think it should be done. He writes:

In attempting to estimate the fair rate of saving the persons in the original position ask what is reasonable for members of adjacent generations to expect of one another at each level of advance. They try to piece together a just savings schedule by balancing how much at each stage they would be willing to save for their immediate descendants against what they would feel entitled to claim of their immediate predecessors. (...) When they arrive at an estimate that seems fair from both sides (...) then the fair rate (...) is specified.⁴

It seems in good accordance with Rawls' theory to modify the veil of ignorance so that it, *first*, hides one's place of birth and the historical period of one's lifespan, while, *second*, granting the persons behind it some general ecological knowledge. They should know why, how, and to which extent human societies depend on natural endowments ('life support systems'). They could, for instance,

acknowledge that ecological systems provide a lot of valuable functions that are vital to humans ('instrumental values', see Chapter 5). Considering all this, they should then discuss the question of a fair intergenerational saving schedule.

Behind the veil, we have reasons to adopt a *comparative standard* of intergenerational justice. It requires that the average living conditions should be *at least as good* in future as they are today – if they can be sustained indefinitely. This is a big 'if', indeed, but it is not unreasonable to assume that a high *quality of life* (as distinct from the *standard of living*) is sustainable without the depletion and over-exploitation of natural resources. If so, it would intuitively seem unfair toward future generations to bequeath to them only as much resources as they need to satisfy their basic needs ('absolute standard'⁵). We accept egalitarian standards in many realms of practical reasoning, e.g. in equal treatment before the law, equal liberty for anyone, or in the negative duty not to discriminate persons because of their race, gender, or religious beliefs.

In other cases we act from a *presumption in favour of equality* that implies a burden of proof for those who want to distribute goods unequally. (There are good reasons, though, to distribute goods unequally according to criteria like responsibility, merit, contribution, or special needs.) When we picture humankind as an ongoing chain of generations with the same basic qualities and needs, it seems intuitively right to presume that humans are equal in terms of intergenerational fairness.

This moral intuition is in reflective equilibrium with the reasonable choice that we make behind the veil of ignorance. If we are then asked to choose between different developments of social welfare, defined in terms of quality of life, we may consider the following options:

- (a) Assuming that this is possible, sustain one welfare level w_L1 indefinitely ($w_L1 \infty$).
- (b) Begin with an unsustainable welfare level w_L2 and let it cause a subsequent welfare level w_L3 ($w_L2 \rightarrow w_L3$).

w_L2 is the highest of the three welfare levels, w_L3 the lowest (providing for little more than the basic needs), and w_L1 is in between. A rational person will *prima facie* prefer to enjoy the highest welfare level possible during her own lifetime ($w_L2 > w_L1 > w_L3$). However, if the persons behind the veil are risk-averse enough to have agreed on the difference principle, they will prefer option (a) when considering that anyone could be among those born in the times of w_L3 . Deciding to sustain one good, safe welfare level indefinitely is the even more obvious choice when we act as representatives of family lines, as Rawls suggests. I see no convincing reason why we should adopt an 'absolute' standard of intergenerational equity under the conditions defined by the veil of ignorance. Therefore, the standard should be egalitarian.

Different concepts of sustainability are proposals for different intergenerational saving schedules. This is certainly true if we assume that all concepts of sustainability need to identify an intergenerational bequest package and that, in effect, 'bequest package' means almost the same as 'saving schedule'. It is behind the veil of ignorance that our arguments for different concepts of sustainability must be acceptable. Thus, they must be independent of individual concepts of the good life and of religious doctrines. In Rawls' words, they must be 'freestanding'.

3. The Choice of a Concept

After accepting the basic ethical idea, we need to choose between general *concepts*. The fundamental choice is between 'weak' and 'strong' sustainability. Both concepts

disagree on what we should conserve for the sake of future generations (i.e. the fair intergenerational bequest package) and, more specifically, on whether natural capital can be substituted for. Weak sustainability argues that what counts is the overall value of the bequest package. Natural and artificial capital are, in principle, substitutes. Therefore, the depreciation and degradation of natural capital is permissible under the idea of intergenerational justice if artificial capital is produced at the same rate. Note that ‘capital’ is just shorthand for ‘means of production’. The notion of natural capital is meant to emphasise the autopoietic nature of living nature.

Strong sustainability, in contrast, emphasises that the human sphere is embedded in a natural system (‘biosphere’) and assumes that natural limits ought to constrain our actions.⁶ Artificial capital can only sometimes substitute for natural capital. In general, both kinds of capital are complementary. Those who claim that a natural entity is substitutable bear the burden of proof. Strong sustainability argues in support of a *constant-natural-capital rule*. It notes that natural capital has already grown scarce and will probably become the limiting factor for economic production. Therefore, strong sustainability suggests that developed societies should invest in natural capital. Which indicators we use to measure sustainability depends on the basic conceptual choice.

Recent literature offers a number of arguments that can help us make a rational choice between weak and strong sustainability.⁷ I present them in a nutshell.

First argument. There is no criterion that allows us to cut the web of life to separate the useful from the useless. In matters of moral importance, we should better err on the side of caution. Weak sustainability optimistically and riskily assumes that natural endowments and ecological functions can be substituted

for. The precautionary principle, the min-max criterion, and the safe minimum standard shift the burden of proof in cases where stakes are high and uncertainty is prevailing (see Chapter 6.5c). They justify a prescription to maintain a constant amount of natural capital indefinitely because we cannot be certain whether or which natural entities will be substitutable at any time in the future.

Second argument. The concept of weak sustainability cannot be reconciled with the right of future generations to enjoy equal welfare opportunities and equal freedom of choice. Because we know little about the preferences and lifestyles of future generations, the bequest package should contain all kinds of goods, including natural capital. The ignorance argument does not support weak sustainability. The opposite is true. The persons behind the veil of ignorance know that they have a concept of the good life, but not which one. They know that many people in modern societies place high values on ‘outdoor living’, on ‘recreation in free nature’, on ‘living lightly in nature’, ‘spiritual encounter with nature’, on wilderness experiences, and the like. At least some individuals are, say, biophilic self-perfectionists who try to live according to ‘green’ virtues.⁸ If, behind the veil, we chose weak sustainability, it could happen to us that the veil is uplifted and we find ourselves biophilic naturalists in a ‘full world economy’ where unspoiled nature has been lost. This might not be a catastrophe from the viewpoint of pure economic theory, but it would be a highly uncomfortable situation for any such nature-loving person. Therefore, if we prefer to avoid such an outcome with the veil put on, we should opt for a saving schedule that preserves natural capital.

Third argument. To substitute even for only one ecosystem means to find substitutes for every single of the many kinds of functions, amenities, and services it provides. To

say the least, it is highly uncertain whether we will be able to do so. The multifunctionality of ecosystems in conjunction with uncertainty speaks in favour of a 'constant natural capital rule'.

Fourth argument. The case of the Pacific island of Nauru is a paradigm example against weak sustainability. Heavy mining has almost completely destroyed the island's natural environment. Today, the inhabitants afford a high living standard from the interests of their accumulated capital. They import food and freshwater. At a first look, life seems comfortable in Nauru's coastal settlements. According to the measures of weak sustainability, it is the most sustainable country of the world. However, the average *quality* of life has not increased. Many people suffer from poor health or alcoholism,⁹ and the life expectancy of males is decreasing. The case of Nauru shows that weak sustainability ignores some crucial parameters of human welfare.

Fifth argument. Artificial and natural capital are often complementary. This is Daly's (1996) main argument. Complementarity, as Daly understands it, means that several kinds of capital (i.e. means of production) are necessary to ensure a continued stream of useful goods. If one kind of capital vanishes, the stream of goods declines or stops. For example, fishing vessels and fish or sawmills and forests are complementary goods. On their own, Daly's argument do not justify adopting strong sustainability. But as part of a more comprehensive line of reasoning, the complementarity argument counts.

Sixth argument. Many economists now accept that a minimum stock of natural capital is critical for human survival and well-being. If so, weak sustainability needs to integrate a notion of critical natural capital, including criteria for its determination. These will be both economic criteria for genuine savings and physical or ecological criteria. But

if economists accept the necessity of critical natural capital, they implicitly drop the assumption of unlimited substitutability.

These arguments in mind, the choice between weak and strong sustainability is not a matter of belief. Rational persons behind the veil of ignorance have good reasons to discard weak sustainability. If so, our concept of sustainable development should better rest on the principle that, *prima facie*, natural capital should be kept constant over time because it is almost impossible to draw a line between its critical and non-critical components. We should better choose strong sustainability as a guide to our actions. Intermediate concepts that emphasise the precautionary principle and the safe minimum standard come to very similar conclusions: Modern environmental policy must be an actively precautionary policy that conserves and invests in natural capital.¹⁰

4. What Is Natural Capital?

The contested notion of natural capital, which is at the heart of strong sustainability, comprehends natural resources like freshwater, soil, forests, fish, the ozone layer, the climate system, ecosystem services and functions, species richness, genetic diversity, and units of cultural significance. Many components of natural capital are living beings or results of life, like coal or crude oil.

Natural capital is characterised by internal and dynamic complexity. Its components form a network of relationships. In principle, they are mutually non-substitutable (e.g., fertile soil cannot be substituted with clean air). Landscapes are 'units of significance'¹¹ and, as such, components of natural capital that should be preserved (see Chapter 9). Especially with regard to landscapes, a complex understanding of natural capital must also consider different degrees of 'naturalness'.

Natural capital is a *Totalitätsbegriff* that encompasses several other such concepts. We are far from understanding it thoroughly. Future research should also focus on the relationship between natural capital and cultivated natural capital. However, it is already safe to say that, in the light of this complex notion, persons who have already adopted strong sustainability need to make a lot of amendments to the saving schedule.

5. Conclusion

Strong sustainability leaves room for the dynamics of natural systems. It is by no means morally repugnant¹² because it does not grant absolute priority to nature conservation in any single case. The opportunity costs of implementation are not unbearable. Strong sustainability is compatible with market-based economics, a liberal culture, and a democratic state. It does neither require nor support policies that neglect the production of other types of capital. I think we should permit some substitution of ‘pristine’ natural capital with ‘cultivated’ natural capital. However, this presents us with a conceptual dilemma concerning non-renewable natural resources like oil and coal. If we use them, they will be depleted after some time, which is not in accordance with sustainability. If we are not permitted to use them, this implies that no one is entitled to make use of non-renewables, which seems absurd. Strong sustainability can escape this dilemma by combining the Hartwick rule with a permission for only very modest depletion. Accordingly, we are obliged, *first*, to invest the revenues from the use of non-renewables into research and development toward renewable resources (Hartwick rule) and, *second*, to use only as much oil, coal, and natural gas as the sink capacity of the global climate system allows (see Chapter 10).

So far, we have argued behind the veil of ignorance. Persons behind it have a general ecological understanding, but no knowledge of specific cases. In the Rawlsian theory, we are permitted to vary the features of the original position. We could vary the objective circumstances the persons are familiar with behind the veil – but to do so is beyond the scope of this chapter. In any case it seems safe to argue that we may use the Rawlsian thought experiment to agree on principles, on a reasonable choice between competing concepts, and on general management rules. The implementation of strong sustainability, however, requires political pathways that we are unable to go behind the veil.

Notes

- 1 Brand & Jochum (2000) 2 see Hirsch (2002), chapter 9 3 Daly (1996) 4 *Theory of justice*, §44
5 Krebs (2000) argues in favour of an absolute standard of intergenerational equity. 6 see Daly (1996) 7 see SRU (2002), p. 67, and Neumayer (1999) 8 Cafaro (2003)
9 Gowdy & McDaniel (1999) 10 Lerch & Nutzinger (1998) 11 Holland (1994) 12 cf. Beckerman (1994)