THE IDEA OF SUSTAINABILITY BETWEEN SCIENCE AND PHILOSOPHY

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Abstract

The concepts of sustainability or sustainable development have various meanings and definitions, depending both on the author's vision and on the different set of values or criteria used to define them. Regardless of its specific meaning or definition, the concept of sustainability implies the idea of preservation or conservation, yet when talking about what is to be sustained, why should it be sustained or how should it be sustained the things become extremely unclear. Reviewing the relevant literature regarding the scientific definitions and meaning of sustainability, the current paper argues that ultimately the definition of sustainability and its concrete dimensions are a matter of philosophy and not of science. Defining sustainability entails the idea of values and social justice, yet these are pertaining to philosophy and not to science, which is only able to describe facts or the world as it is and not the world as it should be.

Key words: sustainability, ecocentric perspective of sustainability, anthropocentric perspective of sustainability, values, justice

Introduction

The contemporary debate concerning the problem of sustainable development has determined the emergence of various meanings of sustainability, each built on a slightly different set of values or each defined using a different set of criteria. So, we have at the one end of the spectrum the „ecocentric" concepts, demanding efforts to be directed towards granting nature sustainability for its own sake, and at the other end, the „anthropocentric" concepts, having at their core the idea that nature is valuable only in the light of the consequences it has on the wellbeing of humans. The choice between the two alternatives (and the many intermediary nuances) is ultimately a problem of philosophical nature, that cannot be solved scientifically.

Moreover, whatever concept of sustainability we will prefer, the dominant way of dealing with the principles of practical action will necessarily be concerned with the allocation of resources. Since the resources available in any society are by definition scarce, and should not be wasted, at the first sight we could say that the problem we face is an economic one: it concerns the allocation of scarce resources. But if we go further, it becomes clear that the matter goes beyond economics, because in order to find the rules of action, we must first decide which entity we chose to sustain, and which does not deserve our attention, and second, how much from the available resources are we willing to spend in order to gain sustainability.

In any society, in the last instance, the problem of resource allocation is a problem of decision, and decision implies a certain conception of justice: what exactly is the just allocation of resources between alternative present uses, or between present and future? But justice is a philosophical problem, not a scientific one, so ultimately the solution for the sustainability dilemmas cannot be found in science, but in philosophy.

1. Theoretical Framework

Since 1987, when the UN's Bruntland Commission released its document on sustainability, asserting the necessity of fulfilling the needs of the present generation without endangering the fulfilment of the needs of future generations and remarking the necessity of designing proper measures for managing the commons (UN, 1987), numerous definitions of sustainability and sustainable development have been advanced by experts in various fields of research. It is even estimated that there are about 300 definitions of the two terms in the field of environmental management and related disciplines, of which around 140 different denotations were released in a period of only two years after the 1987's Bruntland Report (Johnston et al, 2007). More importantly, in the absence of a commonly accepted, standard definition of sustainability, it is extremely hard if not impossible to measure sustainability or progress in this field (Moore et al, 2017).

The concepts of sustainability or sustainable development have various meanings and even more definitions, depending both on the author's vision and on the different set of values or criteria used to define them. Regardless of its specific meaning or definition, the concept of sustainability implies the idea of preservation or conservation, yet when talking about what is to be sustained, why should it be sustained or how should it be sustained the things become extremely unclear. The complexity and difficulty of defining sustainability has led many authors to consider that it is more accurate to talk about "philosophies" rather than "theories", or "models" of sustainability (Loukola & Kyllönen, 2005). From this point of view, a comprehensive literature review indicates that, widely speaking, there are three main general perspectives of envisaging the intricate concept of sustainability, which place either humans or nature at their core. At the one end of the spectrum, the anthropocentric perspective (or the so-called "Conception A") assumes that nature is valuable only in the light of the consequences it has on the wellbeing of humans. At the other end of the spectrum, the ecocentric perspectives (the so-called "Conception B" and "Conception C", with noticeable differences between them) assume that efforts are to be directed towards granting nature sustainability for its own sake (Dobson, 1998, pp. 33-61).

The following sections of the current paper will briefly present each of the three main philosophies of sustainability, in an attempt to identify their weaknesses and strengths related to their possibility of becoming the dominant view that would guide the decision-making process and set the foundations for public policies.

2. Different Philosophies of Sustainability

Although vague and prone to different interpretations, the concept of sustainability makes reference to the relation between nature and humans. Therefore, a first category of problems here is related to the value of nature. If we assume that nature has only an instrumental value, being important only as long as it provides the necessary resources for ensuring the welfare of humans, we place ourselves on an anthropocentric perspective and all our actions will be directed towards viewing nature only as a means to a higher end. On the other side, if we assume that nature has an intrinsic value and it should be protected for its own sake, then we place ourselves on an ecocentric perspective and all our actions will aim at viewing nature as an end in itself. A big question here is whether nature should be considered only as a means to a higher end or an end in itself, as the answer to this question will guide both the decision-makers in designing policies and the actions of laymen (Schuler et al, 2017).

The antropocentric perspective – *Conception A* – is exclusively focused on the instrumental value of nature, the natural capital being vital for the wellbeing of humans. According to this view, what is to be sustained or preserved is the nature as a resource provider, because the human wellbeing, both of current generations and future ones, is dependent on nature,

which provides the crucial resources for the production and reproduction of the human well-being, for fulfilling the human needs. What is to be done, according to this view, refers to the protection of nature or substitution of resources that are vital for humans, even this might imply that non-human beings are of lower value than human beings.

The first ecocentric perspective – *Conception B* – sees nature as being irreversible and having a high intrinsic value. As a result, what should be sustained refers to elements of nature which are vital, or non-renewable and non-replaceable, which once lost will be lost forever, regardless of their direct or indirect contribution to the human wellbeing. Based on this perspective, non-human beings are as valuable as human beings and, if endangered or threatened with extinction or destruction, all elements of nature should be protected or substituted.

The second ecocentric perspective – *Conception C* – assumes that all the elements of nature have an intrinsic value, therefore they should be equally valued and protected or sustained. What is to be sustained is nature more generally, because of its high value, be it about human or non-human beings, or about man-made or natural elements. According to this perspective, even if we could reconstruct a destroyed ecosystem, it would not be the same. Therefore, each natural element has its unique value and should be protected for its own sake, as every human living today have duties both to future generations, and to nature as such. As beautiful as this latter perspective might seem, it certainly leads to controversial situations. For instance, if any element of nature or being is as valuable as any other, we should be ready to accept that the hungry leopard chasing a little girl is as valuable as the child, that, if necessary, a landscape should be used for setting up habitats for wild animals rather than for building homes for people, or that epidemics and malnutrition should be praised for keeping the population number of poor countries under control (Scruton, 2012, p. 196). A similarly controversial situation results from various initiatives such as the *Voluntary Human Extinction Movement*, which states that all the problems of the worlds will be solved if humans stopped procreating, exposing themselves to a voluntary extinction. According to the supporters of the movement, if entire ecosystems are destroyed by humans and if the population increase inevitably leads to the over-exploitation of resources, the gradual and steady voluntary extinction of humans will clearly solve all these problems (Delingpole, 2013, pp. 223-224).

A second category of problems encountered by any expert when trying to define sustainability is related to the allocation of resources. Whatever concept of sustainability we will prefer, it implies allocation of resources for sustaining, conserving or protecting what is to be protected. Resources available in any society are, by definition, scarce, therefore at a first sight it seems that the problem we face is an economic one: it concerns the allocation of scarce resources. Going further with this inference and supposedly logical arguments, it results that, if the problem we are faced with is an economic one, then a simple cost-benefit analysis would be sufficient for deciding how many resources and what kind of resources should be directed towards ensuring sustainability and sustainable development. In order to find the rules of action, we must first decide which entity we chose to sustain, and second, how much from the available resources are we willing to spend in order to gain sustainability. Moreover, if resources are unquestionably scarce, and they should be directed towards ensuring sustainability, it results that some interests and/or some categories of individuals should be sacrificed for a higher goal. However, as intensively debated, a cost-benefit analysis is unconceivable when interests that cannot be traded are involved, such as fundamental freedoms or primary needs pertaining to the very survival of humans (Scruton, 2012, p. 188).

A third category of problems when trying to define sustainability is related to social justice and intergenerational justice, which are also philosophical concepts. A good argument for

the fundamental philosophical character of these issues and at the same time an excellent example of the difficulties that may appear when science is employed for answering moral questions concerning justice in the context of sustainability can be found in Kristin Shrader-Frechette's book on environmental justice (2002). Here, discussing the relation between distributive and participative justice from the perspective of the principle of *prima facie* political equality, she sheds some light on the way careless use of scientific ideas can lead to environmental injustice. Thus, argues Shrader-Frechette, the principle of *prima facie* political equality is connected both with distributive and participative justice. The idea of distributive justice in the context of sustainability issues and of environmental justice is of the utmost importance because it requires a morally equitable repartition of both benefits (wealth, resources, opportunities, leisure) and costs (air and water pollution, waste dumps, climate change) among all members of the society, meaning that all those concerned must have equal technological benefits and bear equal ecological burdens. Certainly, the natural distribution of costs and benefits may or may not be equitable, and certain inequalities among individuals are unavoidable, because they are based on innate abilities (some of them are stronger or have a higher I.Q., for instance), while others are avoidable, being the result of social arrangements (for instance, wealth or social status). The second category leads to the problem of equality, be it political (meaning equal treatment by the law) or economic (concerning wealth distribution). Four kinds of arguments, believes Shrader-Frechette, can be formulated for advancing equality: (a) all human beings have similar capacities for a happy life; (b) the principle of equality is rational; (c) the principle of equality can be the basis of other ethical values, such as justice, fairness, autonomy; (d) the very idea of law presupposes equality for those with the same situation (Shrader-Frechette, 2002, p. 26). According to (b) and (c), in order to build a fair society, it is absolutely necessary to found it on the principle of equality. Yet equality does not always mean that everyone should receive exactly the same treatment, quite the opposite: the treatment must be proportional to the justification and strength of one's claims to it, so treatment must not be similar, but in accordance to the merit of the individual. Nevertheless, what should be always equal is the respect and concern with which every individual is seen in the context of the distribution of goods, opportunities and of legal treatment.

Consequently, rather surprisingly, the principle of *prima facie* political equality does not necessarily mean that the imposition of unequal environmental burdens on different social groups is a violation of the equality. A violation of the principle would presuppose either that there are no relevant moral reasons for the unequal distribution, or that the groups' comparative interests were wrongly estimated from the first instance. Differently said, the principle of equality is considered *a priori* valid, and only the different or unequal treatment has to be justified: those who wants to impose discrimination must bring serious moral reasons for it, otherwise it would mean an abusive use of power.

But the principle of distributive justice, according to Shrader-Frechette, is not enough if we want to achieve environmental justice, because it tends to ignore the, sometimes unjust, institutional contexts that influence distribution. It is essential that people should acknowledge and correct the institutional causes of injustice, for example the case of those who, benefiting from the advantage of having more money, gain more access to other goods, such as environmental advantages. This can be achieved by introducing a principle of participative justice, and thus removing the inequality of opportunity in the decision making. According to the principle of *prima facie* political equality, the institutional and procedural norms should be reframed such as to guarantee that both experts and stakeholders have equal power of decision when it comes to voting decisions concerning environmental or sustainability problems. Continuing in the same vein, Shrader-Frechette argues against the usual reverence for the so-called experts and their opinions, and for what

she calls 'scientific proceduralism', i.e. a system of procedural, legal and methodological reforms destined to encourage the public rational debate and negotiation about sustainability and environmental issues (Shrader-Frechette, 2002, p. 34).

But what happens when expert opinion, and especially scientific expert opinion is used as the basis of decisions concerning the moral problems of environment and sustainability? According to Shrader-Frechette, in those cases the injustice and inequality are perpetuated because the appeal to scientific methods of decision encourages people to ignore or to excuse environmental injustice. For instance, the use of econometric data and models, such as cost-benefit analysis and the aggregation assumption, ignoring the evaluation of distributive inequalities, as a method to measure various distributions of environmental impact and effects on sustainability can lead to false or unethical conclusions and therefore to mistaken decisions (Shrader-Frechette, 2002, pp. 34-36). Economic models can indicate which alternative of action is more 'efficient', more 'economic', more 'safe' or most 'cost-effective', but do not answer the remaining questions: more efficient, economic, safe for whom?

How is this situation to be explained and dealt with? Why cannot we use science to solve decision problems concerning sustainability and environmental justice? Because these are not scientific problems, but philosophical ones: they do not concern *de facto*, but *de jure* situations, not what the situation is, but what it ought to be. This dichotomy originates in the work of Scottish modern philosopher David Hume who, as many of his commentators observe, drew a clear distinction between questions of science and matter of fact on the one hand, and questions of ethics and matter of morality on the other hand (Wright, 2009, pp. 253ff).

At the end of the first section of his 1740 book *A Treatise of Human Nature*, Hume asserts that: "In every system of morality, which I have hitherto met with, I have always remarked, that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when of a sudden I am surprized to find, that instead of the usual copulations of propositions, is, and is not, I meet with no proposition that is not connected with an ought, or an ought not. This change is imperceptible; but is, however, of the last consequence. For as this ought, or ought not, expresses some new relation or affirmation, it is necessary that it should be observed and explained; and at the same time that a reason should be given, for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it." (Hume, 2007, § 1.1.27) According to this paragraph, Hume believes that there is a fundamental difference between descriptive statements, concerning what is the case and value statements, concerning what ought to be that case. For Hume, as we can see, it 'seems altogether inconceivable' to logically derive second-type statements from the first-type ones. This radical position, argues J.P. Wright, can be found even more clearly expressed in other Humean works, such as the essay *The Sceptic* (Cf. Hume, 1987). Here, the Scottish philosopher argues for strong scientific realism, the doctrine that things have an existence independent of any subject, and truth is entirely independent from our beliefs, ideas and concepts. On the other hand, moral and aesthetical judgements are not entirely determined by the real qualities of the external objects judged, but are essentially influenced by our own sentiments and feelings of delight or uneasiness, approbation or blame. The same idea can be found also in the 1751 book *Enquiry Concerning the Principles of Morals*, where Hume states that we use our faculty of reason to discover objects "as they stand in nature, without addition or diminution" (Hume, 1998, Appendix I). In contrast with reason, i.e. the mental faculty that investigates objective reality, we also have a second, 'productive faculty', that produces moral and aesthetical ideas and values and uses them to judge and evaluate the objects in the real world. The world in itself does

not contain values: values are created by humans and projected onto the things and actions in the world.

The precise meaning of the Humean distinction between matters of fact and matters of value, between 'is' and 'ought' continues to be a question of intense debate between philosophers (Cf. Hudson, 1969), who never stopped trying to understand how what ought to be the case should be connected to what is the case. In the first instance, argues W.D. Hudson, we can agree that the logical form of sentences as 'This action is right' and 'This apple is red' are the same. Some would say even that both are descriptive statements: the first one describes an action, a moral fact, while the second describes an object, a physical fact. But the majority of philosophers believe that even the two sentences are syntactically identical, have the same grammatical and logical form, there is a difference between them in meaning. In the case of moral statement, in fact, we are not describing something, but prescribing, evaluating, taking a position, expressing an attitude, advising (Hudson, 1969, p. 12).

Therefore, how can we make a connection between the two kinds of statements? In practice, they seem to be used very often in conjunction. To use Hudson's example, individuals often move logically from statements of fact, as 'Religion is a debatable problem' to moral statements: 'Religion ought not be taught in school'. But the problem here is that the syllogism is not complete, as it still needs a major premise in order to be valid: 'Whatever is debatable ought not to be taught in school'. This major premise, however, necessary for the validity of our syllogism, is not a statement of fact, but a moral statement (it contains an 'ought'), and this is a general rule. If we want to derive a moral conclusion (an 'ought' statement), the major premise must be a moral statement also. For the philosophers who acknowledge this logical gap, this means either that 'ought' cannot be reduced to 'is', or that 'ought' cannot be derived from 'is'.

From our point of view, this idea means nothing less that the decisional problems concerning the right decisions to be made in order to attain ecological justice and sustainability are not to be left to science, because science deals with matters of fact. These are problems to be dealt with by moral and political philosophy, because they are *de jure* questions, concerning not what is, but what ought to be. And as we have seen, what ought to be remains an open question, one still to be debated.

Conclusions

Scientific theories of sustainability never indicate clearly what is to be preserved and what is not, and they do not help us choose between various concepts of sustainability, centred either on human beings (the anthropocentric perspective) or on nature as such (the ecocentric perspectives). Science deals with statements about facts, describes the state of affairs, the world as it is (*what is*), while philosophy deals with the world as it should be, deals with statements about values (*what ought to be*). Therefore, the choice between the anthropocentric and ecocentric perspectives (and the many intermediary nuances) is ultimately a problem of philosophical nature, that cannot be solved scientifically.

Scientific approaches of sustainability help us identify and explain the factors that are crucial for sustainability, yet ultimately sustainability is about decision-making regarding social goals and distributional options, which imply value judgements, ethical judgements, therefore, philosophical considerations for or against a certain philosophical orientation, a certain conception of social justice, a certain system of values, a particular conception of intergenerational justice.

Therefore, although valuable and absolutely essential, science cannot solve all the problems implied by sustainability, because sustainability is not a problem pertaining to science, more specifically to economics, but a problem of philosophy. Science and economic

reasoning are focused on facts and individual choices, yet sustainability regards choices and interests of communities, of current and future generations. Only philosophy can guide decision-makers and neophytes equally in their endeavour to ensure sustainability, on condition that philosophy is given its traditional role, that of providing a worthwhile guide of living a good life and searching for wisdom.

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