

● Sustainability science and philosophy: avenues for cross-fertilisation

Ludovic Cocogne,
International and European Relations Directorate,
IRD, Marseille, France

"While it seems natural to separate and maintain a healthy distance between science and philosophy, two very different ways of questioning the world, do they not have touchpoints in the very fabric of ideas?"

E. Klein (2021)

Background

There is a complex relationship between philosophy and science, involving both complementary and conflicting aspects, in that they both attempt to understand the world and find the truth, and they both eschew myth and common sense. This relationship assumes different forms in different historical periods, fields of study and systems of thought. Sustainability science is, more than any other field, ontologically linked to philosophy, since it tries to answer two of philosophy's founding questions: **What can I know? What should I do? Which knowledge for which action?** It is therefore desirable to lay the foundations for theoretical and practical dialogue around the cognitive and ethical concepts of sustainability. A recent article by Michuru Nagatsu, a philosopher at the *Hel-sinki Institute of Sustainability Science*, invites us to do so and outlines a number of avenues for moving forward together.

Contact

ludovic.cocogne@ird.fr

Further reading

NAGATSU M., DAVIS T., DESROCHES C.T. *et al.*, 2020 – Philosophy of science for sustainability science. *Sustain. Sci.*, 15 : 1807–1817.

Philosophy, science and sustainability science

In the absence of a universally accepted clear definition, sustainability science can be defined as a science that seeks analytical and practical solutions to promote sustainable development. It is transdisciplinary and co-constructed, and requires public policy stakeholders and others in society to participate in a process of transformation and break down thematic, academic and geographical barriers. To establish itself as robust and credible, sustainability science has a natural rapport with epistemology, the philosophy of knowledge and analytical philosophy, through its contributions to the analysis of utterances, language and logic. However, as a science ontologically associated with practices of social transformation, it has an updated and potentially broader relationship with moral and political philosophy, without being related exclusively to particular systems or schools.

Nagatsu *et al.* (2020) outline some of the avenues of collaboration and areas of partnership where the use of philosophy can accompany the development of sustainability science, strengthening its internal cohesion and explanatory power, giving it the ability to respond to objections, resolve certain ambiguities and clarify its stance on some of the issues it faces.

Epistemological and methodological issues

A methodological challenge for sustainability science is the shared obligation to produce knowledge that is both epistemically sound and practically usable, even when the prerequisites for cognitive correctness and action effectiveness may differ. Sustainability scientists have thus begun to discuss a



Main features of sustainability science (drawing by Lison Bernet).

range of methodological issues, including the transferability of transdisciplinary case study-based knowledge and the integration of scientific and non-scientific evidence and knowledge (for example, local knowledge and indigenous knowledge). Contexts also need to be analysed in detail to see if they can be compared sufficiently to justify an analogical, inductive approach through extrapolation and results transfer. There is therefore a need for methodological innovations that involve transgressing current epistemic norms and standards within disciplines by setting specific objectives, focused on the challenges of sustainability. Epistemological issues arise from the interactions between disciplines and the way in which the disciplinary structure of science supports the development of interdisciplinarity and transdisciplinarity. Transdisciplinarity is usually approached as a variant of interdisciplinarity, requiring that integrative interactions involve more stakeholders from outside academia. However, the role that disciplinary knowledge and methods play should not be overlooked. How does the emphasis on practical impact – for example, solution-oriented work carried out with non-academic partners – affect the reliability of the knowledge produced? Is there a trade-off between the immediate acquisition of applicable knowledge and the long-term development of general theoretical knowledge, which may later prove valuable in unexpected areas (e.g. evolutionary game theory)? It is important to work out answers to these questions collaboratively.

The question of values

Separating the world of facts from the world of values, the empirical from the normative, the “is” from the “ought”, forms a traditional boundary between science and morality. Even though this Kantian or positivist dichotomy has been tempered, especially by the work of the philosopher Hilary Putnam, scientists are expected to confine themselves to the first of these realms and not to encourage any blurring between them. However, the 2030 Agenda is not axiologically neutral. It promotes a model of society in which certain choices are explicit (equality, gender, governance, poverty, etc.), while others are implicit and produce norms and behaviours (the Green Sustainable Development Goals, in particular). Some researchers and indeed some institutions working on sustainability advocate engagement with society, to develop interventions that make the world a fairer, more sustainable place. Although the ethics of science, according to the sociologist Robert Merton, include universalism, organised scepticism, disinterestedness and communalism, they do not suggest that value judgements should be rejected. In any case, “what to look for”, “where to look” and “why look” are not “value-free” questions. Philosopher Heather Douglas insists that, for sustainability science to be successful, it is crucial to explain how certain values, including the ethical values of sustainability scientists, can legitimately be part of the research produced, and to design methods and institutions capable of counteracting the biases that

values can produce (in terms of objectivity or the questions asked for example). Exposing implicit values and negotiating between them is an essential task in sustainability research, one that must be taken into account if we are to avoid “blurring the lines” between passing

on knowledge and promoting our own world-view or interests. The need for axiological neutrality in scientific research must be combined with the recognition of scientists’ legitimacy to participate in society and in shaping the world.

KEY POINTS

It is important to work on researchers’ reflexivity and how much they question their own practice. How are epistemic, ethical values from different disciplines integrated into integrative, concrete scientific practices? We need to engage more fully with these new and evolving practices, such as experimentation and action research with explicit ethical commitments, and develop relevant evaluation tools. This requires more constructive interactions between philosophers and sustainability scientists, including joint research, and a critical interchange point to stimulate productive interactions between the two communities.

SUSTAINABILITY SCIENCE

UNDERSTAND, CO-CONSTRUCT, TRANSFORM

Collective thinking coordinated
by Olivier Dangles and Claire Fréour

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