

• The contribution of gender studies to transdisciplinary sustainability science

Anastasia-Alithia Seferiadis,
IRD, UMR LPED, Marseille, France

Background

The rise of transdisciplinary research (i.e. the integration of knowledge from a variety of disciplines, including non-academic knowledge) has been fuelled by the realisation that complex problems require analytical approaches that transcend disciplinary boundaries. Transdisciplinarity is thus regularly cited as a response to the challenges of studying complex problems pertaining to “sustainability.” “Transdisciplinarity in sustainability science” is an increasingly widespread concept in research publications, particularly in English, with an emphasis on its “transformative” potential. All of which raises questions as to the nature of the epistemological transformation associated with transdisciplinarity in sustainability science.

Contact

anastasia.seferiadis@ird.fr

Further reading

MAX-NEEF M. A., 2005 – Foundations of transdisciplinarity. *Ecological economics*, 53 (1) : 5-16.

STAFFA R. K. et al., 2022 – A feminist ethos for caring knowledge production in transdisciplinary sustainability science. *Sustainability Science*, 17 (1) : 45-63.

Transformative epistemology or epistemological transformation?

Transdisciplinary sustainability science must be defined not only with reference to the epistemology of transdisciplinary research, but also to the normative objective sustainability (i.e. the production of knowledge which will enable us to face the challenges of sustainable development, focusing on the interactions between humans and the environment, the essential subject matter of sustainability science). Sustainability science is defined more by the problems it studies than by the disciplines upon which it draws. The recent surge in interest in transdisciplinarity in sustainability science is closely connected to its transformative potential. What we have here is a transformative epistemology, potentially conducive to the resolution of complex problems. This in turn raises further questions for the scientific community: should fundamental research remain aloof from the political objectives of development? In reality, science focused on contemporary problems is capable of producing knowledge conducive to change, while research processes involving non-academic actors and utilising methodologies with an emphasis on processes of critical consciousness (informed by the work of Brazilian philosopher Paulo Freire) can foster the development of knowledge built upon co-construction, combining scientific knowledge with experiential and local knowledge. Approaches of this kind nurture critical consciousness, with the potential to catalyse societal transformation.

Participatory approaches of this kind require reflexive thinking, as well as the capacity to question the power dynamics in play between

the different actors involved in processes of co-construction. We may also wonder whether transdisciplinarity should be regarded simply as a transformative epistemology, i.e. valued for its potential to transform socio-ecosystems, or if it does not also represent a form of epistemological transformation. While transdisciplinarity necessarily implies contributions from varied forms of knowledge, it differs from other forms of disciplinary interactions in terms of the manner in which these forms of knowledge are produced. Max-Neef (2005) proposes a review of the various definitions applied to different modes of disciplinary interaction, gauging levels of cooperation or coordination using a gradient which stretches from multidisciplinary to pluridisciplinarity, to interdisciplinarity and as far as transdisciplinarity. Cross-pollination of knowledge – the essence of transdisciplinarity – represents a challenge to the binary, linear logic of the Aristotelian tradition, cleaving instead towards the “complementarity of opposites” proposed by Danish physicist Niels Bohr. Transdisciplinary epistemology thus recognises iterative, systemic and holistic modes of reasoning, reconciling the rational with the relational. It thus constitutes an “open structure” endowed with “extraordinary epistemological consequences,” because closed theories are not capable of delivering the necessary “permanent potentiality for the evolution of knowledge.”

The contribution of gender studies

In this context of knowledge co-construction, gender studies offer a number of analytical frameworks which can help us to deconstruct

the power dynamics in play. Standpoint feminism posits that knowledge is dependent upon the point of view of those who produce it, and thus argues for the development of a feminist epistemology based on women's experiences. 'Decolonial' feminism (which emerges from this process) incites us not only to challenge the patriarchy, but also to decolonialise knowledge. Ecofeminism, meanwhile, allows us to re-examine gender-based systems of exploitation simultaneously with the systems of exploitation pertaining to nature. Feminist critical theories can thus help us to challenge the social relations of gender dominance and rethink our positioning as researchers, i.e. the ways in which the power dynamics within which researchers operate can influence the production of knowledge. Building upon these theories, Staffa et al. (2022) propose approaching sustainability science via the feminist ethical framework of *care*. This allows us to reframe the practices of transdisciplinarity within the relations of care which bind participants together. This shift of perspective allows us to more effectively engage with the conflicts and divergent interests which are inherent to the multiple systems of knowledge in play, adopting an approach to relationship management – including their conflictual aspects – which defies institutional expectations of research programmes, namely the demand to turn out win-win solutions while refraining from engaging with underlying power relations (between genders, social classes etc.). Whereas in fact, the transformative potential of transdisciplinarity – according to the authors – resides in its capacity to develop research "communities" defined by their relations of care, i.e. pushing back against the individualisation and



Popular education programme teaching women about solar engineering technologies; Barefoot College, Tilonia, Rajasthan, India, August 2018.

marginalisation of such collaborative relationships within the neoliberal academic milieu. They thus call for a more inclusive, participatory vision of research, founded upon collaborative processes with a long-term scope. Much as materialist feminists have laid bare the connections between neoliberal globalisation and gender inequalities, the time has

now come to challenge the neoliberal model of academic research, characterised by “fast science,” competition and evaluation on the basis of impact factors. Gender-informed sustainability science offers an alternative vision

of academic research which could form the basis of a relational approach to the construction of knowledge, a form of “slow science” which is resolutely collaborative rather than competitive.

KEY POINTS

Transdisciplinary sustainability science is a “transformative” prospect. It encompasses both a transformative epistemology, i.e. the capacity to transform socioecosystems, and an epistemological transformation based upon modes of reasoning which are holistic and iterative, reconciling the rational and the relational. Gender studies can cast new light on the very essence of this transformative potential: the capacity to challenge power dynamics. An approach informed by the ethics of *care* enables us to better comprehend the relations of care – as well as the conflicts – which are inherent to processes of knowledge production drawing upon multiple forms of knowledge. This shift in perspective paves the way for transdisciplinary and transformative sustainability science founded upon a relational and collaborative approach to knowledge production.

SUSTAINABILITY SCIENCE

UNDERSTAND, CO-CONSTRUCT, TRANSFORM

Volume 2

Collective thinking coordinated
by Olivier Dangles and Marie-Lise Sabrié

IRD Éditions

**French National Research Institute for Sustainable Development
Marseille, 2023**

D2S follow-up of the articles: Claire Fréour and Magali Laigne
Editorial coordination: Marie-Laure Portal-Cabanel
Cover: Charlotte Devanz
Design and layout: Aline Lugand

Cover photo: Rock painting, Cueva de las Manos, Argentina.
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PDF version ISBN: 978-2-7099-3003-1