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The importance of questioning the values, background assumptions, and normative orientations shaping sustainability research has been increasingly acknowledged, particularly in the context of transdisciplinary research, which aims to integrate knowledge from various scientific and societal bodies of knowledge. Nonetheless, the concept of reflexivity underlying transdisciplinary research is not sufficiently clarified and, as a result, is hardly able to support the development of social learning and social experimentation processes needed to support sustainability transitions. In particular, the concept of reflexivity is often restricted to building social legitimacy for the results of a new kind of 'complex systems science, with little consideration of the role of non-scientific expertise and social innovators in the design of the research practice itself. The key hypothesis of the paper is that transdisciplinary research would benefit from adopting a pragmatist approach to reflexivity. Such an approach relates reflexivity to collective processes of problem framing and problem solving through joint experimentation and social learning that directly involve the scientific and extra-scientific expertise. To test this hypothesis, the paper proposes a framework for analysing the different types of reflexive processes that play role in transdisciplinary research. The main conclusion of the analysis is the need to combine conventional consensus-oriented deliberative approaches to reflexivity with more open-ended, action-oriented transformative approaches.

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