

TOUR D’HORIZON OF LITERATURE 2019

td-net

Network for Transdisciplinary Research

In order to give an overview of key literature in the area of inter- and transdisciplinarity, td-net invites every year experts in the field to list recent key publications (see list of contributors, page 9). In this document, we present literature published in 2019 with short annotations written by the experts that recommended the publications.

We would like to thank the contributors for their inputs and are looking forward to another productive year for inter- and transdisciplinary research.

All previous “Tour d’Horizon of Literature” issues can be found on *our website*.

This document is interactive: the references are hyperlinked with the matching website.

Categories

Theories and epistemologies.....	2
Approaches, methods and tools.....	3
Research policy: funding, quality criteria, evaluation	4
Case studies and reflections on research projects	5
Education.....	6

Theories and epistemologies

Assmuth, T. et al. (2019): *Integrative concepts and practices of health in transdisciplinary social ecology*. Socio-Ecological Practice Research 2, p. 71–90.

- An overview on integrating approaches to health, considering their research outlets, central narratives and communities of practice. (SRu)

Guimarães, M. H. et al. (2019): *Who is doing inter- and transdisciplinary research, and why? An empirical study of motivations, attitudes, skills, and behaviours*. Futures 112, p. 102441.

- Interesting review of the motivations, attitudes and skills of transdisciplinary researchers, the challenges they perceive and their behaviour. Besides the T-shaped and the TD specialist, multipotentialites are added as further player to the TD arena, people with multiple interest, who might get bored soon. (CPo)

Keestra, M. (2019): *Imagination and Actionability: Reflections on the Future of Interdisciplinarity*. Issues in Interdisciplinary Studies, 37(2), p. 110-129.

- This article argues that for inter- and transdisciplinarity to fulfill their claims, they must integrate imagination as a way to consider options for solutions to problems and include actionability as a criterion for assessing project results. (MKe)

Kueffer, C., Schneider, F. and Wiesmann, U. (2019): *Addressing sustainability challenges with a broader concept of systems, target, and transformation knowledge*. GAIA 28(4), p. 386 – 388.

- A fundamental critique of the concept of systems, target, and transformation knowledge widely used in transdisciplinary research. (CKu)

Lawrence, R. J., Forbat, J. and Zufferey, J. (2019): *Rethinking Conceptual Frameworks and Models of Health and Natural Environments*. Health 26(2), p. 158-179.

- Discipline based research cannot deal with the complex, multi-dimensional nature of people-health-natural environment relations. (RLa).

Mauch, C. (2019): *Slow Hope. Rethinking Ecologies of Crisis and Fear*. RCC Perspectives: Transformations in Environment and Society 2019/1.

- This publication is a nice illustration of the great relevance of the Environmental Humanities for transdisciplinary environmental research. It illustrates how perspectives from history and the cultural sciences can provide a new fundament for our understanding of the environmental crisis and possible solutions. And RCC Perspectives as a publication series is a great example of how the social and cultural environmental sciences can outreach to a broader audience. The publication also stands for all 'RCC Perspectives' publications in 2019 that all would be worth including. (CKu)

Nierling, L. and Torgersen, H. (2019): *Normativität in der Technikfolgenabschätzung*. TATuP 28(1), p. 11-14.

- A special issue focusing on the normative dimension of TD practice in technology assessment. (KKa)

Renn, O. (2019): *Die Rolle(n) transdisziplinärer Wissenschaft bei konfliktgeladenen Transformationsprozessen*. GAIA - Ecological Perspectives for Science and Society, 28(1), p. 44-51.

- Globalisation, digitisation and sustainabilization: the transformation of the world is accompanied by conflicts and contradictions between these transformations. How can democratically constituted societies deal constructively with such conflicts? The paper presents a new modular concept for a transdisciplinary scientific approach that combines and integrates classic curiosity-driven research with goal-oriented (advocacy) knowledge and catalytic, process-oriented expertise, and that may ideally lead to conflict resolution. (MBI)

Ukowitz, M. and Hübner, R. (Hrsg.) (2019): *Interventionsforschung*. Band 3: Wege der Vermittlung. Intervention – Partizipation.

- The chapters in this edited book deal with participation as the core issue of transdisciplinary research. They cover also the question about the legitimacy of scientific interventions and do thus link transdisciplinary research and transformative research. (ADG)
- The anthology brings together texts on the topic of conveying between science and practice, as well as on intervention and participation. It addresses central concerns such as core processes of transdisciplinary research. The topics are dealt with on the basis of concrete projects as well as on the level of philosophy of science. (LKr)

Vienni Baptista, B. et al. (2019): *Preliminary Report of Literature Review on Understandings of Interdisciplinary and Transdisciplinary Research*.

- This report from the SHAPE-ID project presents initial findings from a systematic literature review that is innovative in combining qualitative and quantitative methods and in surveying both academic and policy literature. It examines understandings of inter- and transdisciplinarity in the academic and policy literatures, identifies factors and, importantly, considers implications for the challenge of integrating Arts, Humanities and Social Sciences disciplines in inter- and transdisciplinary research. (DWa)

Approaches, methods and tools

Defila, R., Di Giulio, A., ed. (2019): *Transdisziplinär und transformativ forschen*, Band 2. Eine Methodensammlung. Wiesbaden. Springer.

- The book is a sequel to the book published in 2018. It provides heuristics for how to analyse actors participating in transdisciplinary and transformative projects as well as methods that have been developed in real-world laboratories and that can be applied in a broad variety of transdisciplinary projects. (ADG)

Krause, G., M. F. Schupp (2019): *Evaluating knowledge transfer at the interface between science and society*. Gaia- Ecological Perspectives For Science And Society, 28(3): p. 284–293.

- Accompanying twelve knowledge-transfer projects in earth system science, the authors developed a knowledge transfer process assessment framework. Principles for good knowledge transfer processes emerged, as well as corresponding assessment criteria. As a result, the authors drew six conclusions for research accompanying knowledge transfer processes. (AJo)

Lawrence, R. (2019): *Transdisciplinary Responses to Children's Health Challenges in the Context of Rapid Urbanization*. Sustainability 11(15): 4097.

- The article addresses a highly important topic and proposes new ideas, founded on collective thinking involving several disciplines and professions. It suggests new working methods, founded on collaboration with community associations in civil society and including dialogue with children who become partners rather than subjects of research for policy making (TBu).

Nicolescu, B. and Pasquier, F. (2019): *To be or Not to be Transdisciplinary, that is the New Question. So, How to be Transdisciplinary?* Transdisciplinary Journal of Engineering & Science 10, p. 1-7.

- This fundamental paper actualises from primary to latest theories of transdisciplinarity. (FPa)

Nicolescu, B., Yeh, R. T. and Ertas, A. (2019): *Being Transdisciplinary*. USA. TheATLAS.

- This book shows that transdisciplinary international movement arrived at its maturity and new important avenues of research and action are opening. The contributions are written by authors (ranging from famous transdisciplinary researchers to PhD students) coming from a large variety of fields of knowledge. (BNi)

Nikulina, V. et al. (2019): *Lost in translation: A framework for analysing complexity of co-production settings in relation to epistemic communities, linguistic diversities and culture*. *Futures* 113, p. 102442.

- Innovative framework to manage diversity in transdisciplinary projects. The framework encompasses epistemic standpoint, language and culture. It was developed to better understand and navigate participatory workshops in culturally different European countries (Sweden, Poland, Lithuania). (CPo)

Schulz, G., Arvidson, P. S. and Augsburg, T. (2019): *Julie Thompson Klein: Engaging, Extending, and Reflecting*. *Issues in Interdisciplinary Studies*, 37(2), p. 13-192.

- An important collective work on, from and beyond the work of Julie Thompson Klein which addresses the multiple dimensions of inter- and transdisciplinarity. (FDa)

Sengupta, P., Shanahan, M. and Kim, B. (2019): *Critical, Transdisciplinary and Embodied Approaches in STEM Education*. Springer.

- Overall, I argue that this book advances critical, transdisciplinary, and embodied approaches in STEM education by illustrating the following: (a) how pedagogical design of transdisciplinary activities can lead to the creation of new representational genres where multiple disciplines meet and coexist, and (b) when learners' bodies and our collective and colonial histories become part of such investigations, we can challenge cultural and disciplinary hegemonies in K-12 and teacher education. (AEs)

Siegrist, D. (2019): *Alpenwanderer*. Eine dokumentarische Fußreise von Wien nach Nizza. Bern. Haupt.

- Slow travel on foot across the Alps as transdisciplinary action research. (CKu)

Research policy: funding, quality criteria, evaluation

Belcher, B. M. et al. (2019): *Linking transdisciplinary research characteristics and quality to effectiveness: A comparative analysis of five research-for-development projects*. *Environmental Science & Policy* 101, p. 192-203.

- Interesting analysis of the impact of five transdisciplinary projects from the perspective that "any project operates within a complex system". The main outcome is that transdisciplinary projects, through their manifold connections to their project environment, potentially might have greater influence. (CPo)

Graf, J. (2019): *Bringing Concepts Together: Interdisciplinarity, Transdisciplinarity, and SSH Integration*. *fteval Journal for Research and Technology Policy Evaluation* (48), 33-36.

- Even though inter- and transdisciplinarity play a major role in Horizon 2020, there is only very limited discussion about the consequence for applicants, evaluators, and funders. This article clarifies some basic questions with special consideration of the Social Sciences and Humanities. (JGr)

Lyall, C. (2019): *Being an Interdisciplinary Academic: How Institutions Shape University Careers*. Palgrave Pivot

- A book which situates the debate on interdisciplinarity in the academic context of the modern university and which shows the advantages but also the difficulties and misunderstandings in interdisciplinary work. (FDa)
- This book highlights the importance of interdisciplinarity in the academic landscape, and examines how it is understood in the context of the modern university. While interdisciplinarity is encouraged by research funders, academics themselves receive mixed messages about how, when and whether to follow this route. Building upon a series of career history interviews with established interdisciplinary researchers, the author reveals fundamental misunderstandings about the nature of interdisciplinary knowledge, how this is shared, and the skills these researchers bring. (IFI)
- Very useful and practical book that offers both analyses of the institutional presences and obstacles of interdisciplinarity. It offers also some guidance in how to navigate these. (MKe)

- The perception that inter- and transdisciplinary careers are risky for researchers is one of the most significant obstacles to mainstreaming inter- and transdisciplinarity in higher education institutions. This is a very important contribution to understanding how academics navigate the disciplinary structures of universities to carve out such careers and the ways universities might need to change to support these pathways. (DWa)

Müller, R and Kaltenbrunner, W. (2019): *Re-disciplining Academic Careers? Interdisciplinary Practice and Career Development in a Swedish Environmental Sciences Research Center*. *Minerva* 57, p. 479-499.

- Re-constructs identity challenges for interdisciplinary researchers and careers. (KKa)

Saric, J. et al. (2019): *Leveraging research partnerships to achieve the 2030 Agenda Experiences from North-South cooperation*. *Gaia- Ecological Perspectives For Science And Society*, 28(2), p. 143-150.

- Creating an interconnected, transnational knowledge society that provides equal opportunities for everyone could prove a powerful way of moving towards sustainable development. Transnational research partnerships are considered fundamental for creating such shared knowledge (SDG 17) and can help forge a path towards a more balanced production and dissemination of knowledge by doing more transdisciplinary research and receiving support from funders, governments, the private sector and civil society. The paper gives 14 recommendations providing the necessary practical tools to assure equal access to information and opportunities, put in place incentives, and drive the change of mind-sets of researchers, funders and partners outside academia. (MBI)

Schneider, F. et al. (2019): *Research funding programmes aiming for societal transformations: Ten key stages*. *Science and Public Policy* 46(3), p. 463–478.

- This is one of the few articles that focuses on the design of Research Funding Programmes which are aiming at fostering transdisciplinary projects. It is therefore of great value and may serve as an example for follow-up publications with use cases in other countries& regions. (JGr)
- The publication is one of very few publications addressing funders. It provides a suggestion of how funders can support transdisciplinary research. It is both theoretically and empirically justified and applicable. (ADG)

Weith, T. et al. (2019): *Beyond projects: benefits of research accompanying research Reflections from the research programme Sustainable Land Management*. *GAIA* 28 (3), p. 294–304.

- An accompanying research project related to a research programme in sustainable land management was analysed. One outcome was that the intermediate position between the expectations of funding agencies (service to the public) and scientific research institutes (excellence and knowledge production) can cause conflicts. For successful accompanying research, it is important that evaluation and accompanying research are strictly separated. (AJo)

Case studies and reflections on research projects

Bauer, A. and Kastenhofer, K. (2019): *Policy advice in technology assessment: Shifting roles, principles and boundaries*. *Technological Forecasting and Social Change* 139, p. 32-41.

- Re-constructs diverse roles transdisciplinary researchers exhibit in giving policy advice. (KKa)

Debono M. W. and Maia Souza, G. (2019): *Plants as electromic plastic interfaces: A mesological approach*. *Progress in Biophysics and Molecular Biology* 146, p. 123-133.

- To show how the communication capacities of plants derive from a transdisciplinary review of the plasticity of the boundaries between ecosystems and cognitive systems of life. (MDe)

Gebhardt, L., Brost, M. and König, A. (2019): *An Inter- and Transdisciplinary Approach to Developing and Testing a New Sustainable Mobility System*. Sustainability 2019, 11, 1284.

- This paper presents and discusses an inter- and transdisciplinary approach to developing and testing a mobility-on-demand-system in a “real world laboratory”. Using this research project as an empirical example, the paper describes a methodology for involving stakeholders in the research and development process of a new mobility concept. (TDe)

Lamine, C., Madga, D. and Amiot, M.-J. (2019): *Crossing Sociological, Ecological, and Nutritional Perspectives on Agrifood Systems Transitions: Towards a Transdisciplinary Territorial Approach*. Sustainability 2019, 11, 1284.

- The article conducts a comparative analysis of two projects focusing on agri-food system transitions. It compares and contrasts the two frameworks mobilised in the case studies and considers them in a territorial perspective. (TDe)

Süssbauer, E. et al (2019): *Employee roles in sustainability transformation processes: A move away from expertise and towards experience-driven sustainability management*. GAIA- Ecological Perspectives for Science and Society, 28 (1), p. 210-217.

- How can sustainability transformations within companies be assisted and stimulated? The paper convincingly argues for the involvement of (the experience of) „ordinary“ employees and their empowerment by appropriate structures and organisational culture. Analysing four transdisciplinary research projects all aimed at initiating, accompanying and analysing processes of sustainability transformation within companies, the paper especially focuses on the roles of ordinary employees in processes of corporate greening (implementers, ambassadors and recipients of corporate sustainability practices). (MBI)

Van Breda, J. and Swilling, M. (2019): *The guiding logics and principles for designing emergent transdisciplinary research processes: learning experiences and reflections from a transdisciplinary urban case study in Enkanini informal settlement, South Africa*. Sustainability Science 14, p. 823–841.

- Hands-on description of a case of transdisciplinary research in developed world context with interesting reflections on some more fundamental principles drawn about doing transdisciplinary research in general. (MKe)

Vaughan, J. et al. (2019): *Developing Creativity to Enhance Human Potential in Sport: A Wicked Transdisciplinary Challenge*. Frontiers in Psychology 10(2090), p. 1-16.

- I think scientists have been afraid to use the word creativity to describe their work, or use it to enhance their productivity. This is a key paper that hopefully will start that shift into a more openly, unashamedly, creative industry. (SKh)

Wolff, M. G., et al. (2019): *Exploring and expanding transdisciplinary research for sustainable and just natural resource management*. Ecology and Society 24 (4): 14.

- Comparative analysis of four case studies to reflect on the practice of TD research in natural resource management in South Africa. The focus is on values and ethics, and the contribution of TD to sustainable and just natural resource management. (TDe)

Education

Collado-Ruano, J., Madroñero, M. and Álvarez, F. (2019): *Training Transdisciplinary Educators: Intercultural Learning and Regenerative Practices in Ecuador*. Studies in Philosophy and Education, 38(2), p. 177-194.

- This research shows how TD education was included in Ecuadorian studies to create regenerative cultures focuses to face global change. (JCo)

Darbellay, F., Louviot, M. and Moody, Z. (2019): *L'interdisciplinarité à l'école. Succès, résistance, diversité*. Neuchâtel. Editions Alphil. Presses Universitaires Suisses.

- A reference book that offers a synthesis on inter- and transdisciplinarity in the school context, bringing together the best French-speaking specialists. (FDa)

Global University Network for Innovation (GUNI), ed (2019): *Higher Education in the World 7. Humanities and Higher Education: Synergies between Science, Technology and Humanities*. Barcelona.

- A wide-ranging and ambitious report on the need for better integration between the humanities, science and technology in research and education, with state-of-the-art reviews, proposals for change and a large number of case studies. The report includes multiple chapters on interdisciplinarity. (DWa)

Keller, L. et al (2019): *Changing Climate Change Education. Exploring moderate constructivist and transdisciplinary approaches through the research-education co-operation k.i.d.Z.21*. GAIA - Ecological Perspectives on Science and Society. 28 (1), p. 35

- Innovative learning settings play a central role in Climate Change Education. Pupils can better understand climate change and its consequences when they actively produce their own learning outcomes by doing their own research and by co-operating with experts in authentic learning environments. The article thus presents a successful example of transdisciplinary teaching and learning. (AJo)
- This research shows how TD education was included in Ecuadorian studies to create regenerative cultures focuses to face global change. (JCo)

Khoo, S.-M., Haapakoski, J., Hellstén, M., & Malone, J. (2019). *Moving from interdisciplinary research to transdisciplinary educational ethics: Bridging epistemological differences in researching higher education internationalization(s)*. European Educational Research Journal, 18(2), 181–199.

- The authors respond to current debates about the call to involve diverse disciplinary, linguistic, pedagogical communities and wider social actors trying to connect research to social justice and transformation in academic work. Therefor they also discuss the use of tools such as social cartography to do 'bridging work' across different disciplinary and theoretical backgrounds and contexts. (TPa)

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