

## TOUR D'HORIZON OF LITERATURE 2018

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). In this document, we present literature published in 2018 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.*

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## Theories and epistemologies

Grunwald, A. (2018): *Transformative Wissenschaft als honest broker? Das passt!* GAIA – Ecological Perspectives for Science and Society, 27(1), p. 113-116.

The author picks up a discussion about the roles researchers take in transdisciplinary processes. It is a short, but clarifying and orienting contribution concerning the challenge of dealing with normativity in research. (MUK)

Klein, J. T. (2018): *Current Drivers of Interdisciplinarity: The What and the Why*. In: A.-S. Mohammed Nasser, et al., eds: *Promoting Interdisciplinarity in Knowledge Generation and Problem Solving*. Hershey, PA, USA: IGI Global, p. 14-28.

A very relevant review of the literature on conceptual vocabulary for learning and communication in transdisciplinary collaborations. (FDa)

Kueffer, C., et al. (2018): *Applying the Environmental Humanities*. GAIA – Ecological Perspectives for Science and Society, 27(2), p. 254-256.

The Environmental Humanities are a fast growing meta-field that brings together the humanities and (critical) social sciences with the arts and environmental sciences. This article discusses how the Environmental Humanities through their complementary epistemologies, theories and ways of representing knowledge can enrich the transdisciplinary dialogue about the engagement of sciences and society about how to address grand societal challenges. (CKu)

Montuori, A. (2018): *Creating Social Creativity: Integrative Transdisciplinarity and the Epistemology of Complexity*. In: I. Lebuda and V.P. Glăveanu, eds: *The Palgrave Handbook of Social Creativity Research*. New York: Palgrave, p. 743-765.

Alfonso Montuori demonstrates the potency of transdisciplinary inquiry in a stunning discussion on creativity. He also explores transdisciplinarity itself, addressing pragmatic and epistemological concerns, making a compelling argument for a close relationship between transdisciplinarity and complexity. In conversational prose, Montuori captures the essence of transdisciplinarity and in doing so inspires readers to consider ways they may become more transdisciplinary, too. (JCh)

It links wicked problem and what kind of research-practitioner interaction it needs, focusing and the more fundamental issues what research needs for doing this. (anonymous)

Moody, Z. and F. Darbellay (2018): *Studying childhood, children, and their rights: The challenge of interdisciplinarity*. *Childhood. A journal of global child research*, 26(1), p. 1-14.

An epistemological reflection on the interdisciplinary fields of Childhood and Children's Rights Studies. Theoretical backgrounds and identification of conditions for interdisciplinary work. (FDa)

Rowland, S. (2018): *Jungian Literary Criticism: The Essential Guide*. London: Routledge.

The most innovative aspect of this book is to consider transdisciplinarity as the most socially liberating framework both for Jungian studies and interpretation of literary texts. The key point is to take the transdisciplinary symbolic language as the royal way to open new avenues in the study of narratives, myths and active imagination. The symbolic language implies the intertwining of the included-middle and the a-logical and a-rational Hidden Third. (BNi)

## Approaches, methods and tools

Defila, R. and A. Di Giulio (2018): *Transdisziplinär und transformativ forschen: Eine Methodensammlung*. Wiesbaden: Springer VS.

The book gives interesting insights into transdisciplinary research practice and the challenges going along with it. It is particularly recommended for researchers who are starting their activities in the field of td research. Experienced researchers will appreciate it because it gives insight into the worlds of experiences of colleagues. (MUK)

Fiore, S.M., A. Graesser, and S. Greiff (2018): *Collaborative problem-solving education for the twenty-first-century workforce*. *Nature Human Behaviour*, 2(6), p. 367-369.

Very interesting contribution on education and training needs related to team science, especially on collaborative problem solving. (FDa)

Heinrichs, H. (2018): *Sustainability Science with Ozzy Osbourne, Julia Roberts and Ai Weiwei: The Potential of Arts-Based Research for Sustainable Development*. *GAIA - Ecological Perspectives for Science and Society*, 27(1), p. 132-137.

The article discusses the potential of arts-based research for knowledge production and communication in transdisciplinary sustainability science. It presents innovative and creative perspectives in an informing and entertaining way. The article received the Best Paper Award of the journal GAIA. (USE)

Mahshid, S. and G. Niklas (2018): *Participatory foresight for technology assessment – Towards an evaluation approach for knowledge co-creation*. *TATuP Zeitschrift für Technikfolgenabschätzung in Theorie und Praxis*, 27(2), p. 53-59.

Technology assessment (TA) frequently uses forward-looking methods to anticipate socio-technical changes and their corresponding implications to deduce advice for policy and society. In recent years, participatory methods have increasingly been applied to identify the expectations of society towards future technologies. In this context, several TA projects have developed, applied and adapted a participatory foresight method to engage citizens as well as other actor groups into co-generating advice for research and innovation agenda setting in a standardized process; namely, the multi-perspective and multi-step CIVISTI method (Citizens' Visions on Science, Technology and Innovation). Over the course of the past ten years, about 560 lay citizens without specialised knowledge on technology and innovation and 610 experts and stakeholders have taken part in these processes of co-generation of knowledge. In this contribution, we use our experience with this method and elaborate some criteria for the evaluation of knowledge co-generation and mutual learning in participatory foresight processes within TA. (NGu)

Pettibone, L., et al. (2018): *Transdisciplinary Sustainability Research and Citizen Science: Options for Mutual Learning*. *GAIA - Ecological Perspectives for Science and Society*, 27(2), p. 222-225.

Both citizen science and transdisciplinary sustainability research involve nonacademic actors in the production of knowledge while seeking to contribute to sustainability transitions, albeit in different ways. Reflecting on these different approaches reveals avenues for mutual learning. (TMI)

Schäpke, N., et al. (2018): *Jointly Experimenting for Transformation? Shaping Real-World Laboratories by Comparing Them*. *GAIA - Ecological Perspectives for Science and Society*, 27(1), p. 85-96.

I recommend Schäpke et al. 2018 as I envision the next milestone in transformational science is responding to uncertainty through experimenting with and testing the co-produced knowledge. The rapidly growing literature on action-oriented, sustainability transformations or transitions research share the idea to use experiments in real-world settings, often conceptualised as real-world laboratories, in order to produce evidence about how to foster and achieve social transformation towards sustainability. (anonymous)

Schuck-Zöller, S., C. Brinkmann, and S. Rödder (2018): *Integrating Research and Practice in Emerging Climate Services—Lessons from Other Transdisciplinary Dialogues*. In: S. Serrao-Neumann, A. Coudrain, and L. Coulter, eds: *Communicating Climate Change Information for Decision-Making*. Dordrecht: Springer, p. 105-118.

The use of transdisciplinary approaches is compared across different fields, climate services are introduced as a new field of application. What is more, ten quality criteria of good transdisciplinary dialogues are suggested. (SSc)

Tejedor, G., J. Segalàs, and M. Rosas-Casals (2018): *Transdisciplinarity in higher education for sustainability: How discourses are approached in engineering education*. *Journal of Cleaner Production*, 175, p. 29-37.

Nice summary of td debates and approaches to be used in engineering. (anonymous)

Tröger, K., et al. (2018): *Embracing the Complexity: Surfacing Problem Situations with Multiple Actors of the Pineapple Value Chain in Uganda*. *Systemic Practice and Action Research*, 31(5), p. 557-580.

Systems learning is put forward as a method through which multiple actors in the Ugandan pineapple value chain can work together in a process facilitated by scientists in order to evaluate their problem situations and propose solutions. The impending dialogue offers insights regarding system boundaries bringing together social, environmental and other variables integrating multiple disciplines. (MLE)

Ulrich, W. (2018): *Toward a knowledge democracy. Farewell to Ulrich's Bimonthly*. *Ulrich's Bimonthly*, March-May.

The author explains the central vision that has been guiding his transdisciplinary work on critical systems thinking, known as "critical systems heuristics," and its central methodological tool of "boundary critique." Methodologically rigorous attempts to address the normative dimension of applied science and expertise are still largely missing in the literature on transdisciplinary and application-oriented research practice, which is why I recommend this personal reflection on some basic ideas and motives of my work. (WUI)

van Breda, J. and M. Swilling (2018): *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*.

Inspiring reflection on design principles for transdisciplinary research in the Global South, and why northern principles don't work. (CPo)

Willemsen, M. and R. Watson (2018): *A Transdisciplinary Approach to Wildlife Crime*. In: W.D. Moreto, ed.: *Wildlife Crime: From Theory to Practice*. Philadelphia: Temple University Press, p. 256-278.

Applying TD frameworks to tackle illegal wildlife trade. (MWi)

## Research policy: funding, quality criteria, evaluation

Carr, G., D.P. Loucks, and G. Blöschl (2018): *Gaining insight into interdisciplinary research and education programmes: A framework for evaluation*. *Research Policy*, 47(1), p. 35-48.

The authors suggest a programme evaluation framework to identify meaningful programme management strategies. It is very useful for researchers who are analysing interdisciplinary research projects or programmes. (FSc)

Hansson, S. and M. Polk (2018): *Assessing the impact of transdisciplinary research: The usefulness of relevance, credibility, and legitimacy for understanding the link between process and impact*. *Research Evaluation*, 27(2), p. 132-144.

This article is relevant for scholars interested in transdisciplinary research quality assessment. The authors test research quality based on the three principles of relevance, credibility, and legitimacy that have been highlighted in the literature. The authors refer to Cash et al. (2002) and Belcher et al. (2016) throughout the article as the main sources of literature on this topic, but do not ascribe to the same definitions in their testing of the principles and their criteria, concluding they are not useful to assess the quality of TDR. (RCI)

The authors take a close look on the criteria named in the title and reflect on a qualitative evaluation thereof, as well as on barriers for impact. A clear connection between productive interactions and impact is scrutinized. (SSc)

Belcher, B.M., et al. (2018): A response to Hansson and Polk (2018) "Assessing the impact of transdisciplinary research: The usefulness of relevance, credibility, and legitimacy for understanding the link between process and impact". *Research Evaluation*,

This article is relevant for the advancement of discussion with respect to transdisciplinary research quality assessment. The authors describe and distinguish Belcher et al.'s original definitions and intended meaning from how it was interpreted in Hansson and Polk's article. Several references are used to present elements of and discussion from the Quality Assessment Framework, such as the expanded definition of credibility and the effectiveness principle which were both overlooked by Hansson & Polk (2018). (RCI)

Kassab, O., R.P. Schwarzenbach, and N. Gotsch (2018): *Assessing Ten Years of Inter- and Transdisciplinary Research, Education, and Outreach: The Competence Center Environment and Sustainability (CCES) of the ETH Domain*. *GAIA - Ecological Perspectives for Science and Society*, 27(2), p. 226-234.

The authors assess the impact of the Competence Center Environment and Sustainability (CCES) of the ETH Domain. Focusing on its three areas of activity – research, education, and outreach – they analyze relevant decisions and formulate recommendations for the future design and evaluation of comparable enterprises. They conclude that the academic incentive and reward system has to open up for inter- and transdisciplinarity. (AJo)

Rüegg, S.R., B. Häslar, and J. Zinsstag, eds (2018): *Integrated approaches to health. A handbook for the evaluation of One Health*. The Netherlands: Wageningen Academic Publishers.

One Health addresses health challenges arising from the intertwined spheres of humans, animals and ecosystems. This open access handbook is the product of an interdisciplinary effort to provide science-based guidance for the evaluation of One Health and other integrated approaches to health. It guides the reader through a systems approach and framework to evaluate such approaches in a standardised way. (SRu)

Schneider, F. and T. Buser (2018): *Promising degrees of stakeholder interaction in research for sustainable development*. *Sustainability Science*, 13(1), p. 129-142.

The authors analysed 16 transdisciplinary research projects and suggest a heuristic to design promising stakeholder engagement processes. (FSc)

Zscheischler, J., S. Rogga, and A. Lange (2018): *The success of transdisciplinary research for sustainable land use: individual perceptions and assessments*. Sustainability Science, 13(4), p. 1061-1074.

This article is important to consider for how transdisciplinary research should be managed, designed and implemented. The authors find that there is currently a strong 'practice tendency' in transdisciplinary research (TDR), while TDR-specific benefits of the scientific knowledge gain remain neglected. The general success of TDR projects can be described as rather moderate, indicating several shortcomings in the actual application and management of TDR. (RCI)

Interesting survey on what participants perceive as success in a large transdisciplinary program on sustainable land use. (CPo)

The authors deliver a new view on the success of transdisciplinary projects, contrasting the different perceptions of their success. Besides, they define a special challenge of transdisciplinary research, that is difficult to meet: gain excellent scientific results and disseminate them into the scientific community – on the one hand – and – on the other hand – develop applicable products for the users. (SSc)

### Reflections on transdisciplinary research projects

Fritz, L. and C.R. Binder (2018): *Participation as Relational Space: A Critical Approach to Analysing Participation in Sustainability Research*. Sustainability, 10(8), 2853.

I found the paper worth mentioning since it brings in a spatial dimension by developing a view on participation as a relational space that is formed through reciprocal interactions between activities of stakeholders, (social) structures and processes. (anonymous)

Hilger, A., M. Rose, and M. Wanner (2018): *Changing Faces – Factors Influencing the Roles of Researchers in Real-World Laboratories*. GAIA - Ecological Perspectives for Science and Society, 27(2), p. 138-145.

During the research process, researchers in Real-world Laboratories (RwLs) slip into different roles, e.g. that of reflective scientist, facilitator or change agent. Based on comparisons of three urban RwLs, the authors analyse why and under what conditions the researchers „change faces“. The authors manage to show that transdisciplinary and transformative research endeavours are fruitful, but need regular, structured and well-re-sourced spaces for training of and reflection on the various roles. (USE)

Jaeger-Erben, M., et al. (2018): *Building Capacities for Transdisciplinary Research: Challenges and Recommendations for Early-Career Researchers*. GAIA - Ecological Perspectives for Science and Society, 27(4), p. 379-386.

The article focuses on a topic essential to the further development of transdisciplinary sustainability research: the challenges encountered by early-career transdisciplinary researchers, as well as potential remedies. Young scholars face particular problems, given their lack of longer-term experience and their still fragile position within academia. Drawing on existing literature, an early-career researcher workshop, and own experience, the authors offer insights into the problems faced and solutions found by seven transdisciplinary junior research groups. (AJo)

Lehrer, N. (2018): *Beauty in the flow? Unravelling the messy design process of an urban stream*. Journal of Landscape Architecture, 13(2), p. 74-85.

Building on the notion of aesthetics as a performative factor in ecological restoration and landscape design projects this paper critically assesses that in TD settings and its divergent definitions of values and norms among the stakeholders involved aesthetic theories of design are often useless. The paper then offers a few pointers on how to use aesthetic theories in future participatory processes. (anonymous)

Moschitz, H., et al. (2018): *From Urban Agriculture to Urban Food: A Food System Analysis Based on Interaction between Research, Policy, and Society*. *Nature and Culture*, 13(1), p. 113-134.

A team of economists and social scientists analysed how the sustainability of a city's food system can be evaluated. This was undertaken in continued exchange and collaboration with the relevant urban food system actors. This paper reflects on the action research process, and how this can contribute to the societal debate on food systems transformation. (anonymous)

Pregernig, M., R. Rhodius, and G. Winkel (2018): *Design Junctions in Real-World Laboratories: Analyzing Experiences Gained from the Project Knowledge Dialogue Northern Black Forest*. *GAIA - Ecological Perspectives for Science and Society*, 27(1), p. 32-38.

Real-world laboratories (RwLs) stand for a new format of transformative research. This Design Report reflects on the experiences researchers have gained in the RwL Knowledge Dialogue Northern Black Forest, Germany and presents five design junctions tied to the questions of how to position an RwL in a politicized environment, deploy an interdisciplinary research team, develop the research program in a participatory way, incentivize transdisciplinarity, and engage with stakeholders and citizens. With its focus on negotiation processes over the normative and methodological requirements of RwL research formats as well as the common practices of day-to-day research work, the article contributes to raising the experience in the setting up and realizing of inter- and transdisciplinary projects. (MBI)

Rosa, A., N. Gudowsky, and P. Warnke (2018): *But do they deliver? Participatory agenda setting on the test bed*. *European Journal of Futures Research*, 6(1), p. 14.

In this contribution, we investigate how results produced in a large-scale participatory agenda setting process differ from results of expert-based foresight studies with a similar aim of informing EU research and innovation (R&I) policy. After providing a theoretical positioning and an overview of the EU-wide participatory agenda setting process CIMULACT—Citizen and Multi-Actor Consultation on Horizon 2020, we describe our developed analytical approach that includes five analytical steps and calculation of three metrics. (NGu)

Schmidt, L., et al. (2018): *Stakeholder Involvement in Transdisciplinary Research: Lessons from Three Projects on Sustainable Land Management in a North-South Setting*. *GAIA - Ecological Perspectives for Science and Society*, 27(3), p. 312-320.

The article further develops the 'symbolic language' to display collaboration in transdisciplinary projects. (CPo)

Stover, B., et al. (2018): *Conducting a Large Public Health Data Collection Project in Uganda: Methods, Tools, and Lessons Learned*. *Journal of Research Practice*, 14(1), Article M1.

This article describes the lessons learned from carrying out a policy evaluation study in Uganda, demonstrating the human and social dimensions of such projects. Conducting research in limited-resource settings requires an approach that values the skills and talents of local people, institutions and government agencies, and a tolerance for the unexpected. (DDa)

## Case studies and other transdisciplinary projects

Andres, C., et al. (2018): *Social network to inform and prevent the spread of cocoa swollen shoot virus disease in Ghana*. *Agronomy for Sustainable Development*, 38(5), p. 53.

This is quite a nice paper. Transdisciplinary research is the only way to find a solution for CSSVD in Ghana. (Rho)

Della-Piana, G.M., M.K. Gardner, and Z.M. Mayne (2018): *Toward a Dialogue: Following Professional Standards on Education Achievement Testing*. *Journal of Research Practice*, 14(2), Article M2.

The article illustrates the complexity of following professional standards, using educational achievement testing as a case in point. The potential roles for multiple agents are illustrated from the authors' experience. The article exemplifies the transdisciplinary character of professional practice and its advancement. (DDa)

Evans, N.M. and W.P. Stewart (2018): *The Role of Naturalness in Ecological Restoration: A Case Study from the Cook County Forest Preserves*. *Nature and Culture*, 13(2), p. 232-252.

Using a case study of staff and volunteers Illinois the authors show on how competing notions of naturalness are translated into policy. What I liked was the authors' argument that the multiple and often messy renderings of naturalness on participatory processes should be seen as strength since it would provide flexibility to design and restore what is locally seen as important. (anonymous)

Restrepo, M.J., M.A. Lelea, and B.A. Kaufmann (2018): *Evaluating knowledge integration and co-production in a 2-year collaborative learning process with smallholder dairy farmer groups*. *Sustainability Science*, 13(5), p. 1265-1286.

This article offers a detailed case study showing how knowledge integration can be achieved with societal stakeholders such as Kenyan dairy farmers. Further, it makes an intervention by showing how farmer's own perspectives on this two-year learning experience can be brought into the evaluation of transdisciplinary research. (MLe)

Senabre Hidalgo, E. (2018): *Management of a Multidisciplinary Research Project: A Case Study on Adopting Agile Methods*. *Journal of Research Practice*, 14(1).

The concept of "agile methods," emerging from the field of software development, is discussed with a view to its usefulness in a wider area of multidisciplinary research. The discussion is supported by a case study in research management at the Open University of Catalonia, Spain. Despite the inevitable limitations of a case study, the concept of agile methods is interesting enough to earn this article a recommendation. (WUI)

Ukowitz, M. and C. Pichler-Koban, eds (2018): *Der Vertigo-Effekt. Institutionelle Dynamiken im Naturschutz*. Marburg: Metropolis Verlag.

Basing on a transdisciplinary research project on decision making in nature conservation the book shows how a systemic and dialectic approach can be made fruitful for analysing the institutional structure and for identifying leverage points for change. (MUK)

## Contributors

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**Editor's note:** Unfortunately, the first contributors were not recorded, so that we cannot list their names and instead write "anonymous". These persons are welcome to contact us and we will update the published PDF.