

Tour d’Horizon of Literature 2022

td-net
Network for Transdisciplinary Research

To provide a comprehensive overview of important literature in the field of inter- and transdisciplinarity, td-net annually invites experts from the td-net community to compile a list of recent key publications. Please refer to page 10 for the list of contributors to this year's Tour d'Horizon. Within this document, we present literature published in 2022, accompanied by concise annotations provided by the experts who recommended these 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

Bandola-Gill, J. et al. (2022): What is co-production? Conceptualising and understanding co-production of knowledge and policy across different theoretical perspectives. *Evidence & Policy*, 19(2), 275-298.

- The authors analyze the many meanings of co-production in literature. They come up with five very helpful clusters and how the term is understood in each of them. (CPo)

Darbellay, F. (2022): Creativity and interdisciplinarity: Encounter of two fields of study and foundations for a happy marriage. *European Psychologist*, 27(3), 207–215.

- This contribution looks at Creativity studies from an interdisciplinary perspective. Based on epistemological advances in the field of inter- and transdisciplinary studies, creativity is viewed as a complex subject of study across several disciplines. To complement this approach, interdisciplinary work is itself conceived as a creative process that acts between and beyond disciplinary boundaries. (RSz)

Grundmann, R. (2022): *Making Sense of Expertise: Cases from Law, Medicine, Journalism, Covid-19, and Climate Change*. Routledge.

- This new book provides in-depth examination of the concept of expertise. Part one reviews the theory of expertise and presents a new typology that distinguishes different roles of experts in society. Part 2 presents empirical cases that illustrate these roles and part 3 reflects on the implications for the knowledge society. (JSI)

Head, B. W. (2022): *Wicked Problems in Public Policy. Understanding and Responding to Complex Challenges*. Springer International Publishing.

- Originating in public policy and management, this open access book offers a broad understanding of a key term in transdisciplinarity - wicked problems. Beginning with unraveling the origins of the term, it is carried into current times with many inspirations for researchers working transdisciplinarily. (ALu)

Kaul et al. (2022): Alternatives to sustainable development: what can we learn from the pluriverse in practice? *Sustainability Science*, (17), 1149-1158.,

- Building on Arturo Escobar's relational ontologies, these authors apply the idea of the Pluriverse to specific case studies and show how collective action as a form of power can enhance more sustainable alternatives to conventional ideas of development. (JJa)

Kreimer, P. (2022): Techno-Scientific Promises, Disciplinary Fields, and Social Issues in Peripheral Contexts. *Science as Culture* 32(1), 83-108.

- This excellent article addresses the ability of promissory technoscientific fields to actually address local / peripheral needs and problems. It is thus a valuable contribution to better understanding challenges of transdisciplinary boundary work. (KKa)

Langvatn, S. et al. (2022): Expert accountability: What does it mean, why is it challenging—and is it what we need? *Constellations*, 1-16.

- The highly topical issue of accountability of experts is crucial for addressing the legitimacy problems brought up by increasing expert dependency. This paper explores what exactly does it mean to hold experts “accountable”? and what are the distinct challenges of expert accountability? (JSI)

Salami, Minna: *Afropolitan Blog*.

- The frontier of transdisciplinarity is situated at the intersections of postcolonialism, indigenous knowledge, feminism, the arts and social movements. Minna Salami's blog exemplifies such contemporary knowledge that is largely neglected by the established community of transdisciplinary scholars. Many other scholars have the ability to build bridges between different epistemologies, ontologies and life experiences and invite us to become more transdisciplinary – amongst many others: Báyo Akómoláfé, Francis Kéré, Ailton Krenak, Bonaventure Soh Bejeng Ndikun, Vandana Shiva, Robin Wall Kimmerer or Tyson Yunkaporta, as do projects such as «Devenir Universidad» (CKu)

Schmidt, J. C., (2022): *Philosophy of Interdisciplinarity; in series: History and Philosophy of Technoscience*. London and New York: Routledge.

- This monograph contrasts two essential modes of interdisciplinarity: the technosciences\' interdisciplinarity and the post-normal sciences\' interdisciplinarity. He also provides philosophical as well as societal contexts and implications. (KKa)

Szostak, R. (2022): *Integrating the Human Sciences: Enhancing Progress and Coherence across the Social Sciences and Humanities*. London: Routledge.

- What if we recognized that the human sciences collectively investigate a few dozen key phenomena that interact with each other? Can we imagine a human science that would seek to stitch its understandings of this system of phenomena into a coherent whole? If so, what would that look like? (RSz)

Tjelle Holm, N. & Dreyer, M. (eds.) (2022): *Guidance on the application of the precautionary principle in the EU*. RECIPES project.

- This final product of the Horizon 2020 project RECIPES (REconciling sScience, Innovation and Precaution through the engagement of Stakeholders) provides a clear way forward towards strengthening the precautionary principle in risk governance as well as in transdisciplinary research. (JSI)

Weber, T. & Böhm, H. (eds.) (2022): *Wissenskommunikation Unter Bedingungen von Mehrsprachigkeit*. Peter Lang Verlag.

This publication explores the challenges of cross-cultural communication and highlights the need for finding a common language or "linguistic regime". While a lingua franca may not always be the best option, the authors stress the importance of recognizing the impact of language on our thinking in transdisciplinary research. Overall, this collection provides valuable insights into the complexities of cross-cultural communication. With chapters from the td-net community:

Pelikan, K. et al. (2022): Transdisziplinäre Zusammenarbeit impliziert Mehrsprachigkeit. Das Beispiel der Jigjiga University One Health Initiative / Transdisciplinární spolupráce implikuje vícejazyčnost: příklad Jigiiga One Health Initiative

Paulsen, T. & Studer, S. (2022): Transdisziplinäre Ko-Produktion von Wissen – das Potential einer Perspektive Pluri / Transdisciplinární tvorba znalostí – potenciál tzv. Pluriperspektivy (TPa)

Yasushi, A. et al. (2022): A Survey on How Post-Secondary Courses in Interdisciplinary Studies Are Taught. *International Journal for Cross-Disciplinary Subjects in Education (IJCDSE), Volume 13(1)*.

- Looks at an international set of course outlines for introductory courses about interdisciplinarity. Examines the learning activities, goals, and methods of evaluation. (RSz)

Approaches, methods and tools

Augenstein, K. et al. (2022): Wie entfalten Reallabore Wirkung für die Transformation? Eine embedded-agency perspective zur Analyse von Wirkmechanismen in Reallaboren. *GAIA - Ecological Perspectives for Science and Society* 31(4), 207–214.

- The article addresses a very topical and relevant subject, which provides crucial considerations and indications not only for science but also for application in transdisciplinary environments. It contributes to the discourse on the necessary social transformation processes and provides guidance for practice. (AJo)
- This reflection of impact pathways of real world laboratories was for me very enlightening as the approach overcomes linear thinking of output - outcome - impact. It offers a comprehensive framework for considering physical, cultural, procedural and regulative dimension for designing, reflecting and evaluating real world laboratories - far beyond the the discussed case studies in energy transition. (ALu)

Chambers et al. (2022): Co-productive agility and four collaborative pathways to sustainability transformations. *Global Environmental Change* 72.

- This paper points to the need of transdisciplinary research to critically engage with power inequalities and promotes four different pathways for co-productive agilities that help to distinguish different ways how transdisciplinary research can balance power imbalances. These are summarized as 1) elevating marginalized agendas; 2) questioning dominant agendas, 3) navigating conflicting agendas; and 4) exploring diverse agendas. (JJa)

Colomina, B. et al. (eds.) (2022): *Radical Pedagogies*. Cambridge: MIT Press.

- This book presents a systematized collection of design methodologies and experiences over the decades and also in chronological order. It is an important record and analysis of activities related to conception and production in architecture and urbanism. (Gal)

Herbechter, S. et al. (eds.) (2022): *Palgrave Handbook of Critical Posthumanism*. Palgrave Macmillan Cham.

- A broad survey on the theory and practice of Critical Posthumanism as a new paradigm in many disciplines, introducing inter- and transdisciplinary fields like The Environmental Humanities, the Medical Humanities, the Digital Humanities, The Blue Humanities, Animal Studies, Museum Studies and important concepts to analyse the post/human condition and future of humanity. (Mro)

Keune, H. et al. (2022): One Health and Biodiversity. In: Visseren-Hamakers, I.J., Kok, M.T.J. (Eds.), *Transforming Biodiversity Governance*. (p.93–114). Cambridge University Press.

- Articulating the links between the domains of biodiversity and one health in which transdisciplinarity is applied. Inspiration how to exploit the synergies between the domains. (SRu)

Kirchner, M. et al. (2022): How to Use Scientific Information: Road Map for Tailoring Your Own Natural Hazard Risk Management Solution. In: Teich, M. et al. (eds.) (2022): *Protective Forests as Ecosystem-based Solution for Disaster Risk Reduction*. London, UK.

- It is shown how practitioners can effectively use scientific information in their daily work by active integration. Three steps are discussed: (1) diagnosis of relevance, (2) consultation for fine tuning of solutions and (3) implementation of realistic options. (MKi)

«Natur und wir?», Exhibition at Stapferhaus, Lenzburg.

- This exhibition, as many others, brings together scientific knowledge, artistic work, sensual experience and different cultural and philosophical perspectives to help visitors to engage with the biodiversity and sustainability crises of our time. What is special about this exhibition is that it must attract a very large audience due to its long duration and dimension: “transdisciplinarity for the general public” well done. (CKu)

Pearce, B. et al. (2022): Forks in the road: Critical design moments for identifying key processes in stakeholder interaction. *GAIA*, 31(3), 222–230.

- The paper addresses a major problem of stakeholder participation and provides good conceptual and practical evidence of the proposed solution. It reflects the transdisciplinary aspects of participation and provides an original and constructive contribution to the field of deliberative decision making. (AJo)

Strand, M. et al. (2022): Developing arts-based participatory research for more inclusive knowledge co-production in Algoa. *Current Research in Environmental Sustainability*, (4).

- The paper explores the potential of creative methods to shift mindsets in times of decolonialization and acknowledgment of plurality in knowledge systems. It exemplifies the importance of social learning (that also requires unlearning), reflexivity and 'slowness'. (SSt)

Torralba, M. et al. (2022): Participatory research methods for sustainability. *GAIA*, 31(1).

- The author team announces a new toolkit series aiming to provide an overview of key innovative participatory methods in sustainability research, illustrated with exemplary case studies. They particularly aim to enhance knowledge on how participatory methods can be combined and embedded in sustainability science settings. Each GAIA issue contains one toolkit: #1 Participatory GIS mapping, #2 Participatory Video, #3 Participatory scenario planning, #4 Participatory Ecological Monitoring. To be continued 2023. (USe)

Van Breda, J. (2022): Using Synergic Methods for Being Methodologically Agile (SM4BMA), *International Journal of Sustainable Development Research*, 8(2), 52-65.

- This paper is an inspiring example of how td methods can be embedded in an encompassing design/process/approach; namely the Narrative action research (NAR) approach. It covers considerations of when td-methods are needed, as well as the importance of iterations, evaluation, and guiding principles that address power issues. Thereby, it offers lines of reasoning that may be helpful to other td method developers and process designers. (SSt)

Wilson, C. et al. (2022): Identity, positionality and reflexivity: Relevance and application to research paramedics. *British Paramedic Journal*, 7(2), 43-49.

- The authors explain that positionality is concerned with the researcher clearly stating their assumptions relating to the research topic, the research design, context and process, as well as the research participants; reflexivity involves the researcher questioning their assumptions and finding strategies to address these. (RLA)

Research policy: funding, quality criteria, evaluation

Baptista Vienni, B. et al. (2022): *Institutionalizing Interdisciplinarity and Transdisciplinarity: Collaboration across Cultures and Communities*. New York: Routledge.

Also submitted in the category Case Studies and reflections on research projects

- The editors of this international collection of writing have worked hard to ensure that it goes far beyond a set of interesting case studies. Each contributing author was tasked with answering specific questions and addressing particular topics that enabled the editors to develop a comparative framework for institutionalising inter- and transdisciplinary research and teaching in higher education and this is expertly presented in the opening and concluding chapters of the volume. (CLy)
- There is a lack of institutional research pieces. This one also is global thus not over-emphasizing western Europe and the US. (PNa)
- The book provides a very rich overview of inter- and transdisciplinary initiatives from around the globe and the particular socio-cultural and historical contexts they are embedded in. (CPo)
- An international set of case studies about the institutionalization of interdisciplinary and transdisciplinary approaches in teaching and research. (LRa)

Hoffmann, S et al. (2022): Integrate the integrators! A call for establishing academic careers for integration experts. *Humanities and Social Sciences Communications*, 9 Article Number: 147.

- Foundational for the future of the field. (PNa)
- The definite call to accept specialization in interdisciplinary and transdisciplinary integration as a career path in its own right, and to no longer misconceptualize it as mere 'project coordination. (CPo)

Kastenhofer, K. et al. (2022): "Are You a TA Practitioner, Then?" – Identity Constructions in Post-Normal Science. *Minerva* 61(1), 93-115 .

- This paper addresses academic identity options in inter- and transdisciplinary fields such as technology assessment. It highlights challenges as well as positive responses to post-normal identity struggles in academia. (KKa)

Laursen, B. K. et al. (2022): Pathway profiles: Learning from five main approaches to assessing interdisciplinarity. *Research Evaluation*, 31(3) 326-343.

- Based on a vast analysis of assessment designs for interdisciplinary research (with reference to evaluation theory), this paper describes 5 approaches to assessing interdisciplinarity and discusses their pros and cons, as well as how they can be improved. The paper provides guidance and translates the findings of a systematic review into actionable knowledge for researchers and funders. (SSt)

Case Studies and reflections on research projects

Beck, S. et al. (2022): Crowdsourcing research questions in science. *Research Policy*, 51(4).

- This paper shows nicely how involving the general public (the crowd) directly in the formulation of research questions can benefit research. It does this by comparing the quality of crowd contributions to research questions generated in the conventional scientific process. It is shown that the average crowd contribution has lower novelty and potential scientific impact than professional research questions, but comparable practical impact. However, crowd contributions outperform professional research questions once a selection mechanism at the level of individual contributors is applied. (PLe)

Collado, J. et al. (2022): Ecological Economics Foundations and Environmental Education Practices: Toward Regenerative Cultures? *World Futures*, 78(7).

- The main objective of this article is to explore new paradigms of teacher training in the field of environmental education. That is why this qualitative study explores the literature on ecological economics and degrowth to identify the most important theoretical principles that can be integrated into environmental education practices. From a transdisciplinary approach, the study integrates a philosophical and epistemological dialogue between scientific knowledge and indigenous wisdom of the Ecuadorian peoples. (JCo)

Jacobi, J. et al. (2022): Transdisciplinary co-creation increases the utilization of knowledge from sustainable development research. *Environmental Science and Policy*, 129, 107-115.

- In this study, we were able to show that transdisciplinary methods in sustainable development research can live up to their promises under the condition that they follow certain rules: The early inclusion of a high diversity of academic and non-academic actors in the design, management, implementation and interpretation of the research had a significant effect on the uptake of the research results in policy, practice and science itself. (JJa)

Kuiper, et al. (2022): Exploring desirable nature futures for Nationaal Park Hollandse Duinen. *Ecosystems and People*, 18(1), 329-347.

- New approaches are needed to guide change processes towards sustainable futures that embrace the plurality of people's desired relationships with nature. This paper presents a novel approach to exploring desirable futures for nature and people that was developed through an application in Nationaal Park Hollandse Duinen in the Netherlands, that uses approaches from IPBES and the "Seeds of Good Anthropocene" project. (GPe)

Lawrence, R.J. (2022): Co-Benefits of Transdisciplinary Planning for Healthy cities. *Urban Planning*, 7(4), 61-74.

- This article proposes a radical shift from incremental, reactive, and corrective approaches in planning for urban health to proactive and anticipative contributions using backcasting and alternative scenarios that prioritize health. The article uses the case of public green spaces in planning for urban health. It identifies the shortcomings of many empirical studies that are meant to promote and sustain health before describing and illustrating an alternative way forward. (RLa)

Mast, H. (2022): Conflicting sociotechnical imaginaries of the future built environment. An analysis of current discourses on timber construction in France and Germany. *GAIA*, 31(3), 151-157.

- The author addresses a currently relevant topic in the sustainability discourse: Increased timber construction is seen as an option to a sustainability-optimized building industry in order to shape the built environment of tomorrow. The fact that the author finds that all four identified stakeholder groups proclaim sustainability as their goal for the use and diffusion of wood construction, but do so with different motives and goals, is relevant baseline information for further research on the extent to which wood construction can contribute to sustainable housing development and climate change mitigation. Co-winner of the GAIA Masters Student Paper Award 2022. (USe)

Ness, B. et al. (2022): Getting Personal with Collaborative Sustainability Experimentation: Reflections and Recommendations from a Transdisciplinary Partnership with the Swedish Craft Beer Sector. *Ambio*, 51(12), 2544-2556.

- The paper presents a well structured and concise reflection of experiences made in a transdisciplinary partnership. It highlights challenges of conducting Urban Living Lab research and suggests ways to address them. The reflections and recommendations can provide valuable support to other researchers in similar settings. (PBe)

Oltmanns, A. et al. (2022): The transformational power of real-life experiments for the mobility transition in cities. How temporary car-free zones are changing city centres for the long term. *GAIA*, 31(2), 103–110.

- The author addresses a currently relevant topic in the sustainability discourse: Increased timber construction is seen as an option to a sustainability-optimized building industry in order to shape the built environment of tomorrow. The fact that the author finds that all four identified stakeholder groups proclaim sustainability as their goal for the use and diffusion of wood construction, but do so with different motives and goals, is relevant baseline information for further research on the extent to which wood construction can contribute to sustainable housing development and climate change mitigation. Co-winner of the GAIA Masters Student Paper Award 2022. (USe)

Österblom, H. et al. (2022): Transnational corporations, biosphere stewardship, and sustainable futures. *Annual Review of Environment and Resources*, 47, 609-635.

- Corporations are perceived as increasingly powerful and critically important to ensuring that irreversible climatological or ecological tipping points on Earth are not crossed. Paper reviews multiple formal and informal mechanisms have been developed, and innovative examples of corporate biosphere stewardship have resulted in progress. The paper provide suggestions for aligning corporate activities with the biosphere and argue that such corporate biosphere stewardship requires more ambitious approaches taken by corporations, combined with new and formalized public governance approaches by governments. (GPe)

Schneider, F. et al. (2022): How context affects transdisciplinary research: insights from Asia, Africa and Latin America. *Sustainability Science* 17(6), 2331–2345.

- Sheds light on the complex topic of context dependencies in transdisciplinary research. The paper draws attention to the importance of context-sensitive research that requires adaptation of methods and formates to local conditions to fully engage with transdisciplinary principles of co-production etc. (FTo)

Wendt, B. et al. (2022): Time for change? Time as a challenge for sustainability participation processes. *GAIA*, 31(4), 215–221.

- Wendt and Köhrsen show that participation processes in sustainability transformations can produce specific time patterns that can adversely affect decision-making and negatively influence knowledge and power relations among stakeholders. The topics of urgency and inclusion that cause central dilemmata for sustainability transformation, are discussed as well. (AJo)

Education

Alves, G. et al. (2022): *Algo+ritmo: reflexões sobre ensino, pesquisa e extensão em arquitetura e urbanismo*. São Paulo: ProBooks.

- This book is a compilation of works developed by the algo+ritmo UFMS group (Brazil), which include experiments with architecture from an expanded point of view, including parametric design, digital fabrication, 3D printing, videomapping, collaborative platforms and other multidisciplinary actions, however systematically integrated and analysed. (GAI)

Bernert, P. et al. (2022): Design Principles for Advancing Higher Education Sustainability Learning through Transformative Research. *Environment, Development and Sustainability*.

- The publication provides guidance for developing courses and teaching by bridging sustainability learning and transformative research. The proposed design principles integrate contemporary discourses in transformative sustainability research and education to enable the conceptualisation and reflection of innovative sustainability-oriented teaching formats. The presented set of principles is coherent and comprehensive while remaining open to the diverse teaching spaces of universities and curricula. (PBe)

De la Sienna, E. (2022): De la Educación Ambiental y para la Sostenibilidad, hacia las Cosmovisiones y el Aprendizaje Transformador. In Ramirez, A.M. & Valverde B.R. (eds.) *Debates sobre Medio Ambiente y Sustentabilidad: Teoría, Educación y Nuevas Sociedades*. (P. 87-108) El Colegio de Tlaxcala.

- This article describes the conceptual and pedagogical evolution of environmental education and education for sustainability, arguing the need to move forward towards the transdisciplinary education space. The text offers a Worldviews-Based Learning Framework, as a point of reference for transformative learning for sustainability programs, projects, lessons and all sorts of educational initiatives. (ESi)

Horn, A. et al. (2022): Epistemic stability and epistemic adaptability: interdisciplinary knowledge integration competencies for complex sustainability issues. *Sustainability Science* 17(5) 1959-1976.

- well-researched educational piece. (PNa)

philosophie Magazin, *Sonderausgabe 20 «20 Impulse für 2022»*, Januar/April 2022.

- The primary responsibility of transdisciplinarity in our time arguably is to enable critical, diverse and thoughtful dialogue in the public sphere. The «philosophie Magazin» does for years an excellent job in making philosophical thinking accessible to a broad audience, and it does not shy away from engaging with the topics of the day – transdisciplinary humanities. This collection of essays about pressing issues of our time let's us ask: how relevant is transdisciplinary research for society? (CKu)

UNESCO, 2022: *Beyond Limits. New Ways to Reinvent Higher Education. Working document for the World Higher Education Conference. 18-20 May 2022*.

- This roadmap promotes principles-based transformation in higher education systems by prioritizing sustainability, inclusive technology use, and fresh perspectives on the three missions of higher education. These missions include producing knowledge through inter- and transdisciplinary research, educating well-rounded professionals with a sense of social responsibility, and addressing complex issues cooperatively. (TPa)

Vereijek, M. W. C. et al. (2022): 'Undisciplining' higher education without losing disciplines: furthering transformative potential for students. *Higer Education Research & Development*.

- This paper highlights the importance of boundary crossing in higher education and its potential for transformative learning. By exploring boundaries between disciplines, cultures, and experiences, students and teachers can discover new perspectives and solutions to complex societal issues. The paper serves as a source of inspiration to create innovative and inclusive learning environments. (TPa)

Contributors

Gilfranco Alves (GAl), Philip Bernert (PBe), Javier Collado Ruano (JCo), Johanna Jacobi (JJa), Almut Jödicke (AJö), Karen Kastenhofer (KKa), Michael Kirchner (MKi), Christoph Kueffer (CKu), Roderick J. Lawrence (RLa), Patrick Lehner (PLe), Alexandra Lux (ALu), Catherine Lyall (CLy), Theres Paulsen (TPa), Garry Peterson (GPe), Christian Pohl (CPo), Manuela Rossini (MRo), Simon Rüegg (SRu), Ulrike Sehy (USe), Emilia de la Sienra (ESi), Sibylle Studer (SSt), Rick Szostak (RSz), Farina Luka Tolksdorf (FTo)

Some contributors prefer not to be named (PNa)

Project management and editing

Samuel Basil Rhomberg and Theres Paulsen, td-net

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