

## A Tour d'Horizon of Literature Related to Transdisciplinarity Published in 2015

The number of publications in the field of inter- and transdisciplinary research has been steadily growing during recent years (<http://www.transdisciplinarity.ch/en/td-net/Literatur/Publikationsradar.html>).

In order to give an overview the td-net invites experts of transdisciplinary research every year to inform us about important recent publications in the area of transdisciplinarity (see list of contributors). In this document we present new literature published in 2015 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 transdisciplinary research.

"Tour d'Horizon" literature lists from previous years can be found here <http://www.transdisciplinarity.ch/en/td-net/Literatur/Tour-d-Horizon.html>

The content is interactive and the biographical data is hyperlinked with the matching website.

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## General overviews

Bammer G 2015. *Toolkits for Transdisciplinarity*. GAIA - Ecological Perspectives for Science and Society, V24, N3, pp 149 and V24, N4, pp 221.

„The regular column Toolkits for Transdisciplinarity features toolkits of methods relevant to dealing with complex problems from both the transdisciplinary community and others with intersecting interests. It started in GAIA in issue 3/2015.“ (us)

Bazhanov V A and Scholz R W (eds) 2015. *Transdisciplinarity in Philosophy and Science: Approaches, Problems and Prospects*. Moscow: Navigator.

“This book provides, for the first time, comparative study of the transdisciplinarity phenomenon and its development in the Western and Russian traditions. Namely, it comprehensively conceives transdisciplinarity crucial problems in terms of the novel methodological approaches, and outlines vistas of further studies. Authors argue that transdisciplinary paradigm was emerged as a challenge from social and scientific fundamental problems, and specific humanitarian objectives.” (bn)

Bernstein J H 2015. *Transdisciplinarity: A review of its origins, development, and current issues*. Journal of Research Practice, V11, N1, article R1.

“Bernstein offers a thorough and dependable review of the history of transdisciplinarity. The article locates the origin of the idea in the 1970s and its re-emergence in the 1990s. It draws attention to the potential of transdisciplinarity to invigorate scholarly and scientific inquiry both in and outside the academy. The article uses simple and lucid writing that makes it highly readable.” (dd)

Graff H 2015. *Undisciplining Knowledge. Interdisciplinarity in the Twentieth Century*. Baltimore: Johns Hopkins University Press.

“A relevant book that presents readers with a comparative and critical history of interdisciplinary initiatives in the modern university. It is a story of myths, exaggerations and misunderstandings.” (fd)

Lawrence R J (ed) 2015. *Advances in transdisciplinarity 2004-2014* (Special Issue). Futures, V65, N0, pp 1-216.

“In 2004, the first special issue of any ISI peer reviewed journal on transdisciplinarity was published in Futures, V36, 14, pp 397-526. That issue included articles from contributors who shared an opti-mistic perspective on the future of transdisciplinarity. Today transdisciplinarity is known and refer-enced in all regions of the world according to the response to the open call for contributions to this special issue. Consequently, it is appropriate to take stock, to revisit what has been achieved during the last ten years, and to consider what progress is still necessary.” (rl)

Nature 2015. *Interdisciplinarity* (Nature Special). Nature, N525, pp 305ff.

“Quite remarkable to see Nature publish a special on interdisciplinarity: both on its contributions to complex problem solving and to the challenges interdisciplinary research faces in terms of peer review, funding, and the like.” (mk)

Vienni B, Cruz P, Repetto L, Von Sanden C, Lorigo A, Fernández V (eds) 2015. *Encuentros sobre interdisciplina*. Montevideo: Espacio Interdisciplinario de la Universidad de la República.

Bazhanov V A and Scholz R W (eds) 2015. *Transdisciplinarity in Philosophy and Science: Approaches, Problems and Prospects*. Moscow: Navigator. (see also above)

“These two publications are interesting in that they fulfill a dual task: they offer a platform to interdisciplinary and transdisciplinary scholars from a particular region (Russian speaking countries and Latin America), combining that with a representative sample from colleagues from mainly North America and Europe. The reader can get an impression of overlaps and differences, which should help to forge closer collaborations internationally. It should be mentioned, though, that since the first publication is partly in Russian and the second in Spanish, their audience is less international than one would hope for it. Perhaps selections could be made available in translation in English in the near future?” (mk)

## Concepts of transdisciplinarity

Chemain-Degrange A and Bouvier P (eds) 2015. *Gilbert Durand - De l'enracinement au rayonnement*. Chambéry: Éditions de l'université de Savoie.

"This book is dedicated to the life and work of Gilbert Durand (1921-2012), a famous French anthropologist and philosopher, founder of the school of imaginary. Gilbert Durand was an important transdisciplinary thinker. The book is very important for revealing the transdisciplinary character of the work of Gilbert Durand." (bn)

Darbellay F 2015. *Rethinking inter- and transdisciplinarity: Undisciplined knowledge and the emergence of a new thought style*. *Futures*, V65, pp 163-174.

"A provocative and innovative paper that explains how thinking outside the disciplinary box constitutes a new thought style that transforms disciplinary identities." (fd)

Gibbs P (ed) 2015. *Transdisciplinary Professional Learning and Practice*. Cham: Springer International Publishing.

"This book presents thinking about and through transdisciplinary and professional development as an educative process. Rather than focusing on the delineation of the approaches offered, an analysis of these contributions points to commonality in those problems that benefit from a transdisciplinary perspective. The core elements of transdisciplinarity can lead to what might be called metanoia - another way of knowing; a knowing which is 'beyond that which is creative and transformative.'" (bn)

Kueffer C 2015. «Ecological Novelty: Towards an Interdisciplinary Understanding of Ecological Change in the Anthropocene». In Greschke H and Tischler J (eds). *Grounding Global Climate Change*, pp 19-37. Heidelberg: Springer.

"The chapter's argument is at the heart of TD Research since it focuses on the challenge set by the proclaimed age of the Anthropocene, e.g., that debates on ecological novelty make the distinction between nature and culture seem obsolete. Kueffer makes suggestions on how the science of ecology can be developed as a tool to study the borders and the transition zones between the natural and social sciences." (mg)

Schuttenberg H Z and Guth H K 2015. *Seeking our shared wisdom: a framework for understanding knowledge coproduction and coproductive capacities*. *Ecology and Society*, V20, N1, article 15.

"The authors provide an innovative framework for td-research. Specifically interesting is the distinction of three potential sources of coproductive capacity: individual and organizational capacities; the broader social-ecological system; and the knowledge coproduction process itself." (cp)

Szostak R 2015. «Interdisciplinary and Transdisciplinary Multimethod and Mixed Method Research». In Hesse-Biber S N and Johnson R B (eds). *The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry*, pp 128-143. Oxford: Oxford University Press.

"This chapter draws connections between the literatures on interdisciplinarity/transdisciplinarity and mixed methods research. It shows that they address similar challenges and have similar philosophical justifications. It draws implications for mixed method research from the literature on interdisciplinary/transdisciplinary process." (rs)

## Research policy for transdisciplinarity

Bourke L, Best J D, Wakerman J, Humphreys J S and Wright J R 2015. *Reflection on the development of a research agenda in rural health*. *Journal of Research Practice*, V11, N1, article M1.

“This article presents a reflective case study on how a research agenda was developed at a university centre for rural health. It delves into the complexity of research management where multiple disciplines and professions are involved in addressing practical problems. In this, the authors demonstrate the value of a conceptual framework to contextualise the problems and interpreting the significance of the resulting research agenda.” (dd)

Crow M M, Dabars W B 2015. *Designing the New American University*. Baltimore: Johns Hopkins University Press.

“A provocative book about the institutional innovation: universities are apt to realize unique identities, which maximize their potential to generate the ideas, products, and processes that impact quality of life, standard of living, and national economic competitiveness.” (fd)

Kueffer C, Forêt P, Hall M 2015. *Developing the Environmental Humanities in Switzerland: An Evaluation of Opportunities, Challenges, and Priorities in Research, Teaching, and Institutional Support*. Swiss Academy of Humanities and Social Sciences, Bern.

“The Environmental Humanities are an emerging inter- and transdisciplinary research field that aims to foster problem-oriented research on environmental problems that is rooted in the humanities but builds on interdisciplinary collaborations with natural and social sciences, engineering and planning, and the arts. This report commissioned by the Swiss Academy of Humanities and Social Sciences documents the state of the field in Switzerland and discusses the different ways through which research in the Environmental Humanities can contribute to societal problem solving.” (ck)

Lyll C, Meagher L, Bruce A 2015. *A rose by any other name? Transdisciplinarity in the context of UK research policy*. *Futures*, V65, N0, pp 150-162.

“This article, part of Professor Roderick Lawrence’s edited collection, assesses the role of transdisciplinarity within UK research policy and concludes that, although the term is not widely used within the UK community, elements of TD are nevertheless promoted and supported.” (cl)

## Quality assessment of transdisciplinary research

Jahn T, Keil F 2015. *An actor-specific guideline for quality assurance in transdisciplinary research*. *Futures*, V65, N0, pp 195-208.

“Jahn and Keil present a “quality guideline for TDR” that includes nine quality dimensions for analysing the quality of research problems, of the research process and of the research results. These general quality dimension seem to be useful and practicable.” (lk)

## Interdisciplinary publishing

Pohl C, Wuelser G, Bebi P, Bugmann H, Buttler A, Elkin C, Grêt-Regamey A, Hirschi C, Le Q B, Peringer A, Rigling A, Seidl R, Huber R 2015. *How to successfully publish interdisciplinary research: learning from an Ecology and Society Special Feature*. *Ecology and Society*, V20, N2, pp article 23.

“A lot has been written about interdisciplinarity. How to publish interdisciplinary research has so far rarely been analyzed, however. This paper identifies ten factors that substantially contribute to such a process’ success or failure, using the example of a Special Feature on mountain ecosystem goods and services provision. It is based on a qualitative analysis.” (gw)

## Project management

Larissa K, Lerchster R 2015. *Management von transdisziplinären Forschungsprojekten im Spannungsfeld von Rollenflexibilität, Aufgabenvielfalt und mehrdimensionalen Kompetenzanforderungen*. Forschung, N3-4, pp 89-99.

“The authors describe different competences that are needed for managing td projects on three different, but closely connected levels (the macro level, the meso level and the micro level). For doing so they combine different perspectives of inter- and transdisciplinary research, of project management, of organisational development, and of group dynamics.” (lk)

## Science-policy interface

Palsett H, Chilvers J 2015. *Organizations in the making: Learning and intervening at the science-policy interface*. Progress in Human Geography, V39, N2, pp 146-166.

“The paper focuses on an important but often overlooked topic in transdisciplinary research and practice: Possibilities and hindrances of organizational learning at the science-policy interface. The paper's focus is on single organization's networks to other elements, spatial factors, and external policy makers that are relevant for understanding organizational learning as permanently 'in the-making'.” (mg)

## Problem orientation

Bisaro A, Swart R, Hinkel J 2015. *Frontiers of solution-oriented adaptation research*. Regional Environmental Change, pp 1-14.

“This article build upon the rich literature on adaptive management and applies it to wicked environmental problems. It draws on insights from public administration, social sciences, management sciences and decision sciences. It provides an excellent review of the literature but is also a critical analysis of the boundaries and problems of adaptation as a guideline for coping with environmental problems.” (or)

## Reflexivity

Rosendahl J, Zanella M A, Rist S, Weigelt J 2015. *Scientists' situated knowledge: Strong objectivity in transdisciplinarity*. Futures, V65, pp 17-27.

“The authors draw attention to an important aspect of transdisciplinary research when they point out that “reflexivity includes being aware that power and control over the object is derived from the social position of researchers”. The need to reflect this point is very evident.” (lk)

“This article provides a review of different approaches to transdisciplinary work and points to the often rather abstract concepts that do not reflect the reality of stakeholder processes. It then describes experiences with stakeholder processes for the co-creation of knowledge and action. At the end it reflects what one can learn from the experiences for designing transdisciplinary approaches.” (or)

## Team science

Cooke N J and Hilton M L (eds) 2015. *Enhancing the Effectiveness of Team Science*. Washington, DC: The National Academies Press.

“The book reviews the state of art in Team Science. This is an important milestone for the field of Science of Team Science.” (cp)

Mitchell C, Cordell D, Fam D 2015. *Beginning at the end: The outcome spaces framework to guide purposive transdisciplinary research*. Futures, V65, pp 86-96.

“The authors provide a useful and easy to handle framework for clarifying expectations of participants in transdisciplinary projects. Furthermore the framework suggests to think of three different outcome spaces (situation, knowledge, learning). To prevent frustrations, it is key to make participant's expectations explicit and also to make them realize that different kinds of outcomes can be achieved.” (cp)



## Co-production of knowledge

Jagosh J, Bush P L, Salsberg J, Macaulay A C, Greenhalgh T, Wong G, Cargo M, Green L W, Herbert C P and Pluye P 2015. *A realist evaluation of community-based participatory research: partnership synergy, trust building and related ripple effects*. BMC Public Health, V15, N1, pp 1-11.

“Knowledge co-production is an integral part of transdisciplinary (TD) collaborations. However, there are very few examples in the literature that go beyond a simple description of the process involved. To account for and enhance quality in TD research, a much more rich and convincing evidentiary basis for *how* this collaboration works is needed, not only in reaching the desired objectives within the project’s scope, but also other ‘ripple effect’ impacts and outcomes that TD collaborations may bring. Jagosh et al. (2015) provide one of these few well documented examples. Through a realist evaluation approach, they account for a better understanding of what supports partnership synergy in successful transdisciplinary collaborations, concluding how ‘trust’ is an indispensable mechanism, condition and outcome of TD collaborations. I concur with the authors in that evidence-informed theorization on how and in what circumstances TD collaborations work should be an on-going pursuit.” (ca)

Niederberger M and Wassermann S (eds) 2015. *Methoden der Experten- und Stakeholdereinbindung in der sozialwissenschaftlichen Forschung*. Wiesbaden: Springer Fachmedien.

“The book is a collection different approaches on how to design collaborations between certified and non-certified experts respectively between certified experts and stakeholders. The methods described in the book are both theoretically and empirically sound and tested and proven to work by scholars engaging in transdisciplinary processes.” (ag)

## Knowledge integration

Defila R and Di Giulio A 2015. *Integrating knowledge: Challenges raised by the “Inventory of Synthesis”*. Futures, V65, N0, pp 123-135.

“The paper introduces an instrument developed to facilitate the epistemic analysis and description of the integrated results of inter- or transdisciplinary research and to identify where methods of integration are needed. Furthermore, referring to the results of an interview study, it discusses the special challenge transdisciplinary research has to cope with in dealing with non-academic knowledge.” (ag)

Hughes P C, Munoz J S, Tanner M (eds) 2015. *Perspectives in Interdisciplinary and Integrative Studies*. Lubbock: Texas Tech University Press.

“This edited book gathers contributions from many well-known scholars of integration to explore its philosophical and cognitive underpinnings. They then provide practical advice on how integrative thinking can be encouraged within both curricula and pedagogy -- and how these innovations can be assessed. The intent is to aid students in integrating not only the insights of different disciplines but their learning in college with their experiences at work, at home, and in the community.” (rs)

Klenk N, Meehan K 2015. *Climate change and transdisciplinary science: Problematizing the integration imperative*. Environmental Science & Policy, V54, pp 160-167.

“Integration appears as a buzz-word and catch-all phrase in nearly all TD projects. This article critically reviews different forms of integration (and the rhetorics of it) and suggests forms of co-production as alternative for bringing transdisciplinary to a fruitful end.” (mg)

## Tacit knowledge

Vermeersch P-W, Heylighen A 2015. *Mobilizing disability experience to inform architectural practice: Lessons learned from a field study*. Journal of Research Practice, V11, N2, article M3. "The article demonstrates how disabled people could contribute to architectural research and practice, as participants in the inquiry process. Offering a model for transdisciplinary research, it shows how the embodied experience of disabled people can be a source of learning for professional and researchers in architecture." (dd)

## Transdisciplinarity in action: projects and case studies

Radinger-Peer V, Penker M, Chiari S, Danzinger G, Enengel B, Kühnel F, Sammer K 2015. *Regional vulnerability to the challenges of climate change and energy provision: Lessons learned from transdisciplinary assessments in Austria and Germany*. GAIA - Ecological Perspectives for Science and Society, V24, N4, pp 261-270.

"Recommendations of vulnerability assessments are rarely implemented in local political practice. Presenting regional vulnerability assessments in three Austrian provinces and one German region, the authors demonstrate how transdisciplinary vulnerability assessments can yield context-specific and relevant decision support." (mb)

Seidl I, Böni R, Lauber S, Herzog F 2015. *Developing, Implementing and Communicating Inter- and Transdisciplinary Research: AlpFUTUR as an Example*. GAIA - Ecological Perspectives for Science and Society, V24, N3, pp 188-195.

"How to develop a successful inter- and transdisciplinary research programme that develops new knowledge and yields practice-relevant products? This design report gives an example and informs how the research programme *AlpFUTUR* (22 projects, 80 researchers and implementation experts, and 56 sponsors) was set up and managed, how practice was involved, and how the research process was guided towards a synthesis and a broad array of products that the various stakeholder groups were able to implement." (mb)

## Arts and sciences

Scheffer M, Bascompte J, Bjordam T K, Carpenter S R, Clarke L B, Folke C, Marquet P, Mazzeo N, Meerhoff M, Sala O, Westley F R 2015. *Dual thinking for scientists*. Ecology and Society, V20, N2, article 3.

"The authors probe into why creativity in science is not confined to (or expected) in the 'office or lab' while focused on a particular problem. With recent understanding from cognitive science showing differences in 'intuitive' vs 'reasoned' thinking we now know how critical it is to provide opportunities to unleash creative thinking and interactions with unstructured social time, education for 'daring exploration' and collaboration with the arts among other strategies. Up next, putting the beer tab on the grant as necessary for a 'creativity boost.'" (dk)

## Post-normal science

Bremer S, Funtowicz S 2015. *Negotiating a place for sustainability science: Narratives from the Waikaraka Estuary in New Zealand*. Environmental Science & Policy, V53, Part A, pp 47-59.

"Building on empirical research of the Waikaraka Estuary Managers initiative in New Zealand, this paper stresses that place-based sustainability should be produced in collaboration with the local community. It argues for engaging extended peer communities, drawing from post-normal science and cautions against a dominant 'Cartesian' approach to reconciling, or indeed subsuming, knowledge systems within a scientific framework." (js)

## Real-world laboratories

Wagner F, Grunwald A 2015. *Reallabore als Forschungs- und Transformationsinstrument Die Quadratur des hermeneutischen Zirkels*. GAIA - Ecological Perspectives for Science and Society, V24, N1, pp 26-31.

„The article captures a popular subject, points out definitions, analyses critically and ends with a clear statement. It is a theoretical paper, but with practical examples.“ (tm)

## Societal transformation

Kläy A, Zimmermann A B and Schneider F 2015. *Rethinking science for sustainable development: Reflexive interaction for a paradigm transformation*. Futures, V65, N0, pp 72-85.

“The article argues that science needs to be transformed to be able to contribute to the transformation of society towards sustainable development. It identifies progress towards transformed science achieved so far and the challenges ahead based on an assessment of the current state of science paradigms. The authors postulate that science and science policy are in a lock-in; to move forward they propose a learning process appropriate for initiating a paradigm change.” (ak)

## Sustainability science

Smink M M, Hekkert M P, Negro S O 2015. *Keeping sustainable innovation on a leash? Exploring incumbents' institutional strategies*. Business Strategy and the Environment, V24, N2, pp 86-101.

“This paper explores institutional strategies of incumbent firms with regard to sustainable energy innovations that threaten their interests. Based on semi-structured interviews with actors and on documents related to LED lighting and biofuels in the Netherlands, this study identified a preliminary set of empirical strategies: providing information and arguments to policy makers and the general public, as well as strategically setting technical standards. Incumbents are in a position to significantly influence the innovation's development by employing these strategies; thus temporarily keeping sustainable innovation on a leash.” (js)

## Anthropocene

Jahn T, Hummel D, Schramm E 2015. *Nachhaltige Wissenschaft im Anthropozän*. GAIA - Ecological Perspectives for Science and Society, V24, N2, pp 92-95.

„The Anthropocene discourse originates from the natural sciences, but has recently been taken up by the media and the arts. The article asks about implications of this debate for sustainability or transformative science. It suggests that transdisciplinary cooperation will become the dominant mode of knowledge generation in the Anthropocene.“ (us)

## Urban studies

Dias P, Ramadier T 2015. *Social trajectory and socio-spatial representation of urban space: The relation between social and cognitive structures*. Journal of Environmental Psychology, V41, pp 135-144.

„This paper articulates mainly the social and the psychological trajectory of a person. In other words, in this paper, cognitive maps are more than a social or a cultural representation of urban space. It is also the result of relations and issues between social groups. It is finally an empirical demonstration that social structure cannot be analysed without the psychological structure, and in return. The common idea that a spatial representation is an individual construction from experiences and individual spatial preferences is countered by a transdisciplinary approach.“ (tr)



## **Contributors**

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