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td-net  
Network for Transdisciplinary Research

## A Tour d'Horizon of Literature Related to Transdisciplinarity Published in 2010

Each year the td-net invites experts of transdisciplinary research to inform us about important recent publications in the area of transdisciplinarity (see list of contributors). This document is a bibliography of new literature published in 2010. The list also includes short annotations by the experts on why they recommend these books or essays to the scientific community.

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

You may indicate to us new literature throughout the year. Suggestions to include new journals or publications in the *Bibliography Transdisciplinarity* are very welcome and may be sent to:

Dr. Eva Schumacher at [bibliography@transdisciplinarity.ch](mailto:bibliography@transdisciplinarity.ch)

You can find more information about the bibliography and many more articles at <http://www.transdisciplinarity.ch/e/Bibliography/index.php>

### State-of-the-art: Overview & synthesis documents

Börner K, Contractor N, Falk-Krzesinski H J, Fiore S M, Hall K L, Keyton J, Spring B, Stokols D, Trochim W, Uzzi B 2010. *A multi-level systems perspective for the science of team science*. Science Translational Medicine, V2, N49, 49cm24.

“This article outlines a number of emerging research questions for the science of team science, highlighting multiple influences on the effectiveness of collaboration in science, training, and community problem solving as they are arrayed at micro, meso, and macro-system levels of analysis.” (ds)

Frodeman R, Mitcham C, Klein J T (eds) 2010. *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press.

“*The Oxford Handbook of Interdisciplinarity* provides a synoptic overview of the current state of interdisciplinary research, education, administration and management, and problem solving-knowledge that spans the disciplines and interdisciplinary fields and crosses the space between the academic community and society at large. Its 37 chapters and 14 case studies, all original essays, bring together many of the globe's leading thinkers on interdisciplinary research, education, and the institutional aspects of interdisciplinarity, as well as extended reflections on how knowledge is integrated into societal needs, thereby providing a snapshot of the state of knowledge integration as interdisciplinarity approaches its century mark.” (bh)

Nicolescu B, Breda J V (eds) 2010. *Issue dedicated to the memory of Professor John Warfield. Special Issue*. Transdisciplinary Journal of Engineering & Science, V1, N1.

„Articles by John Warfield, Julie Thompson Klein, Basarab Nicolescu, Atila Ertas, Christian Pohl et al.“ (bn)

## Reflections on the need for and concept of transdisciplinarity

Bogner A, Kastenhofer K, Torgersen H (eds) 2010. *Inter- und Transdisziplinarität im Wandel? Neue Perspektiven auf problemorientierte Forschung und Politikberatung*. Baden-Baden: Nomos.

“Der Band versammelt Beiträge zu unterschiedlichen inter- und transdisziplinären Orten im Kontext der Nachhaltigkeitsforschung, Technikfolgenabschätzung und Technowissenschaftspolitik. Anhand durchwegs aktueller Fallbeispiele wird ausgelotet inwiefern gegenwärtige disziplinenüberschreitende Praxen dabei neue epistemische und/oder politische Aspekte in sich tragen.“ (kk)

“Das Buch enthält elf hochklassige Beiträge, die das Thema in innovativer Weise von mehreren Perspektiven beleuchtet. Die Themenpalette reicht von Technikfolgenabschätzung über Nachhaltigkeitsforschung über Betrachtungen zur wissenschaftlichen Politikberatung bis zu Überlegungen zum Demokratisierungspotenzial.” (mn)

Kueffer C 2010. *Transdisciplinary research is needed to predict plant invasions in an era of global change*. Trends in Ecology & Evolution, V25, N11, pp 619-620.

“A short essay published in a leading disciplinary journal arguing that research on biological invasions, currently mostly the domain of biologists, must become transdisciplinary to foresee future dynamics of an inherently interdisciplinary, socio-ecological phenomenon and to adequately deal with a societal issue where valuation has become controversial” (ck)

Mobjörk M 2010. *Consulting versus participatory transdisciplinarity: A refined classification of transdisciplinary research*. Futures, V42, N8, pp 866-873.

“The article points out that 'including stakeholders' is not a well defined characteristics of transdisciplinary research and needs to be elaborated in terms of how this inclusion takes place.” (cp)

Origgi G, Darbellay F (eds) 2010. *Repenser l'Interdisciplinarité*. Genève: Editions Slatkine.

“This book brings together psychologists, sociologists, philosophers, historians, all voluntarily engaged in a new thinking about the past, present and future of interdisciplinary research. The different contributions and debates aim to stimulate the reflection on the conditions under which this type of research is beneficial, and even becomes necessary to address the complex problems of our time.” (fd)

Weber J (ed) 2010. *Interdisziplinierung? Zum Wissenstransfer zwischen den Geistes-, Sozial- und Technowissenschaften*. Bielefeld: transcript.

“Dieser zweite Band erscheint mir eine ideale Ergänzung, da er das in Bogner et al. (2010) nicht beachtete Feld interdisziplinärer Praxen in den Natur- und Technikwissenschaften abdeckt. Ein weiteres Highlight: er liefert über die empirische und theoretische Analyse technowissenschaftlicher Interdisziplinarität auch eine Weiterentwicklung des Technowissenschaftskonzeptes.“ (kk)

## Integration

Bergmann M, Jahn T, Knobloch T, Krohn W, Pohl C, Schramm E 2010. *Methoden transdisziplinärer Forschung: Ein Überblick mit Anwendungsbeispielen*. Frankfurt am Main: Campus Verlag.

“This book is the first book I know describing methods of integration that are specifically designed for transdisciplinary research.” (cp)

Lenhard J 2010. «Computation and simulation». In Frodeman R, Mitcham C, Klein J T (eds). *The Oxford Handbook of Interdisciplinarity*, pp 246-258. Oxford: Oxford University Press.

Ritter F, Muhar A, Fiebig M 2010. *Transdisziplinärer Dialog: Fachwissen und Erfahrungswissen im Austausch über Sommer-Bergtourismus und Klimawandel – Transdisciplinary dialogue: Expert and experiential knowledge in a discourse on summer mountain tourism and climate change*. GAIA - Ecological Perspectives for Science and Society, V19, N3, pp 194-203.

“Bei transdisziplinären Projekten sollte stärker als bisher beachtet werden, welches spezielle Wissen welche Akteursgruppe liefern kann und dass sich jede Akteursgruppe entsprechend unterschiedlich an den einzelnen Projektschritten beteiligt.“ (tm)

## Evaluation of inter- and transdisciplinary research

Michel C, Heim E, Herweg K, Breu T 2010. *Exploring the effectiveness of development research with a monitoring and learning approach*. Knowledge Management for Development Journal, V6, N2, pp 105-119.

“This article is based on the experiences of a large international research programme focusing on sustainable development. It highlights researchers' strategies to influence policy and development practice and gives recommendations for further empirical research.” (hh)

Stokols D, Hall K L, Moser R P, Feng A, Misra S, Taylor B K 2010. «Evaluating cross-disciplinary team science initiatives: Conceptual, methodological, and translational perspectives». In Frodeman R, Klein J T, Mitcham C (eds). *Oxford Handbook on Interdisciplinarity*, pp 471-493. New York: Oxford University Press.

“This chapter provides an analysis of key theoretical, methodological, and translational challenges confronting efforts to evaluate the processes and outcomes of cross-disciplinary research and training initiatives.” (ds)

## Institutions for transdisciplinary research

Klein J T 2010. *Creating Interdisciplinary Campus Cultures: A Model for Strength and Sustainability*. San Francisco: Jossey Bass and Association of American Colleges and Universities.

“Provides a conceptual framework and portfolio of pragmatic strategies for institutional change: maps developments in knowledge; describes patterns of practice across campuses and variables of change; addresses capacity building through mapping interests, creating oversight and leadership, and building an endowment; defines elements of strength for critical mass, program review, and sustainability; covers the career lifecycle of hiring, tenure and promotion, and faculty development; and concludes with resources.” (jk)

Schneidewind U 2010. *Ein institutionelles Reformprogramm zur Förderung transdisziplinärer Nachhaltigkeitsforschung – An institutional reform agenda for the establishment of transdisciplinary sustainability research*. GAIA - Ecological Perspectives for Science and Society, V19, pp 122-128.

“Die deutsche Politik orientiert sich in weiten Teilen an Nachhaltigkeit. Da erstaunt es, dass transdisziplinäre Nachhaltigkeitsforschung im Land kaum etabliert ist. Ein institutionelles Reformprogramm, das die besonderen Strukturbedingungen des deutschen Wissenschaftssystems berücksichtigt, vermag dies zu ändern.” (tm)

## Education for inter- and transdisciplinary research

Hansmann R, Mieg H A, Frischknecht P M 2010. *Qualifications for contributing to sustainable development: A survey of environmental sciences graduates*. GAIA - Ecological Perspectives for Science and Society, V19, pp 278-286.

“A majority of Environmental Sciences graduates from ETH Zurich consider their systems-oriented, inter- and transdisciplinary education as advantageous for their professional activities – this is shown by a survey. Participants also specified skills needed for contributing to sustainability. Such information helps to further develop pertinent study programs.” (tm)

Kastenhofer K, Lansu A, Van Dam-Mieras R, Sotoudeh M 2010. *The contribution of university curricula to engineering education for sustainable development*. GAIA - Ecological Perspectives for Science and Society, V19, N1, pp 44-51.

“Ein Artikel zu inter- und transdisziplinären Lehrzielen und -methoden in der Nachhaltigkeitsorientierten Ingenieursausbildung. AutorInnenteam und Fallbeispiele aus den Niederlanden und Österreich. Bezüge zu Didaktik, Inter- und Transdisziplinaritätsdiskurs und Technowissenschaftsforschung.“ (kk)

Klein J T, Lenoir Y (co-eds) 2010. *International perspectives on interdisciplinary education in schools*. Issues in Integrative Studies, V28.

“The annual volume of *Issues in Integrative Studies* for 2010 was a special issue coedited by Julie Thompson Klein and Yves Lenoir on international perspectives on interdisciplinary education in schools. There are articles on the U.S., Canada, Australia, Colombia, Spain, France, and Switzerland. There is also a nice introductory essay by the editors.” (rs)

Sotoudeh M 2010 (guest editor). *Focus: Engineering education in sustainable development*. GAIA - Ecological Perspectives for Science and Society, V19, N1, pp 33-60.

“Im Bereich Ausbildung von Ingenieuren wird td Herangehensweise relevant. Der Schwerpunkt widmet sich aus unterschiedlicher Perspektive dieser Herausforderung.” (mn)

## Participation

Bogner A 2010. *Partizipation als Laborexperiment. Paradoxien der Laiendeliberation in Technikfragen*. Zeitschrift für Soziologie, V39, N2, pp 87-105.

“Ergebnis einer Soziologie-Habilitation, die 2010 abgeschlossen wurde. Das Thema Partizipation in Technikfragen wird in diesem Beitrag unter einem neuen Blickwinkel definiert.” (mn)

Cuppen E H W J 2010. *Putting Perspectives into Participation: Constructive Conflict Methodology for Problem Structuring in Stakeholder Dialogues*. PhD Dissertation. Vrije Universiteit, Amsterdam.

“Making use of divergent stakeholder perspectives is vital for dealing with unstructured policy issues such as the transition to a sustainable energy system. Stakeholder dialogue provides a forum for this. The methodological question how to make sure that a stakeholder dialogue actually includes and benefits from the broad range of perspectives however often remains unanswered. Putting Perspectives into Participation provides an answer to this question with Constructive Conflict Methodology for the design and facilitation of stakeholder dialogues. Social science methods play an important role in this methodology.” (kh)

Voinov A, Bousquet F 2010. *Modelling with stakeholders*. Environmental Modelling & Software, V25, N11, pp 1268-1281.

“A good review on the different approaches to include stakeholders in modeling.” (cp)

## Science-policy interface

Groffman P M, Stylinski C, Nisbet M C, Duarte C M, Jordan R, Burgin A, Previtali M A, Coloso J 2010. *Science, communication, and controversies*. Special Issue. Frontiers in Ecology and Environment, V8, N6, pp 283-328.

“An open-access special issue on the role of different actors in science communication in the context of controversial environmental issues. The role of individual scientists as communicators with the general public and as advocates in controversial disputes, and the role of universities, interfacing (boundary) organisations and federal agencies are discussed in separate articles.” (ck)

Hess D J 2010. *Environmental reform organizations and undone science in the United States: Exploring the environmental, health, and safety implications of nanotechnology*. Science as Culture, V19, N2, pp 181 - 214.

“The article focuses on environmental organizations and their potential to draw attention to undone science, science that could have been done but has remained undone for reasons such as not being publishable, not patentable etc. It deals with transdisciplinarity in this sense that it discusses some of the prerequisites on how to include the broader public on the extent to which nanotechnology is desirable by society.” (mg)

Oreskes N, Conway E M 2010. *How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury Press.

“One of several recent accounts on how scientific truth is distorted by exponents of vested interests in controversial issues from health effects of tobacco to climate change.” (ck)

## Uncertainty

Gross M 2010. *Ignorance and Surprise. Science, Society, and Ecological Design*. Cambridge, Massachusetts: MIT Press.

"A thought-provoking essay on the role of uncertainty and ignorance in modern societies written by a sociologist. The author makes the point that ignorance and surprise cannot be avoided and have to be seen as an opportunity for learning, and thus implementation becomes experimentation ("real-world experimentation")." (ck)

"The book discusses the practice of restoration and design which have always acknowledged that nature responds to human effort in surprising and unpredictable ways and, by so doing, so offer an ideal set of cases with which to explore how ignorance and surprise e.g. in environmental decision making pan themselves out. The book frames these cases as part of transdisciplinary work including an explicit chapter entitled "The Transdisciplinarity of Ecological Restoration." (mg)

Kruse S 2010. *Vorsorgendes Hochwassermanagement im Wandel. Ein sozial-ökologisches Raumkonzept für den Umgang mit Hochwasser*. Wiesbaden: VS Verlag.

"This is a revised dissertation on extreme flooding and linking the finding of these events to a general change in the contract between society and nature." (mg)

Kuhlicke C 2010. *The dynamics of vulnerability: some preliminary thoughts about the occurrence of 'radical surprises' and a case study on the 2002 flood (Germany)*. *Natural Hazards*, V55, N3, pp 671-688.

"The paper deals with many transdisciplinary aspects -- without calling it this way -- by showing the intricacies of many knowledge sets in the management of extreme flood events as well as the relationship between publics and "experts" in knowledge production and decision making." (mg)

## Complexity

Alhadeff-Jones M 2010. *Challenging the limits of critique in education through Morin's paradigm of complexity*. *Studies in Philosophy and Education*, V29, N5, pp 477-490.

"The position adopted in this paper is inspired by Edgar Morin's paradigm of complexity and his critique of scientific and philosophical forms of reductionism. This paper is based on research focusing on the diversity of conceptions of critique developed in academic disciplines. Based on a transdisciplinary and multireferential position, it aims to analyze, interpret and challenge the fragmentation and the reduction framing the understanding of the notion of critique in educational sciences." (ma)

Morin E 2010. «Lupasco et les pensées qui affrontent les contradictions». In Nicolescu B (ed). *À la confluence de deux cultures – Lupasco aujourd'hui*. Paris: Editions Oxus.

"In his essay, Edgar Morin traces the "logical antagonism" in the history of human thought: from Daoism (yin and yang) and Heraclitus (day and night), to cabbala and Böhme's philosophy, all these systems of thought referring to the contradictory dynamic unity. Thus, the significance of any philosophy that supports in any way the connection with the idea of contradiction is linked to the idea of non-separability, to a knowledge designed to link together separate elements, to complex thinking that tends to approach human nature to both microcosmic and macrocosmic level." (bn)

Osberg D, Biesta G (eds) 2010. *Complexity Theory and the Politics of Education*. Rotterdam: Sense Publishers.

“Complexity theory has become a major influence in discussions about the theory and practice of education. This book focuses on a question which so far has received relatively little attention in such discussions, which is the question of the politics of complexity. The chapters in this book engage with this question in a range of different ways. Whereas some contributions make a case for the promotion of complexity in education, others focus more explicitly on questions concerning the reduction of complexity in and through education. The chapters do so using theoretical, historical and empirical arguments, paying attention to a range of different educational settings (including early childhood education, school education, post-compulsory education, lifelong learning and work-based education), and focusing on different aspects of these practices (such as curriculum, pedagogy, assessment, architecture, and management). Taken together the chapters not only reveal the potential of complexity for engaging with questions about the politics of education in new and different ways. They also provide examples of a more reflexive engagement with the politics of complexity in education itself.” (ma)

## **Systems theory**

Freyer B, Bingen J, Helgenberger S 2010. «How transdisciplinarity becomes a member in the club of science – Some preliminary thoughts on the contribution of systems theory to theorizing transdisciplinarity». In Trappel R (Ed.). *Cybernetics and Systems*, pp. 366-371. Austrian Society for Cybernetic Studies, Vienna, Austria.

“Der Artikel verweist auf das Potential verschiedener Systemtheorien, Schnittstellen zwischen den verschiedenen wissenschaftlichen Disziplinen sowie den Alltagserfahrungen von Akteuren aufzuspüren. Darüber hinaus wird auf ontologische, epistemologische und philosophisch Grundlegungen der jeweiligen Systemtheorien verwiesen, welche sowohl als Chance als auch als Hindernis fuer die Etablierung einer inter- und transdisziplinaere Wissenschaft zu bewerten sind.” (bf)

## **Transdisciplinarity in the making: Case examples of TD research**

Nigten A (ed) 2010. *Real Projects for Real People*. Rotterdam: NAI Publishers.

“The authors take us on a rich journey of practice lead research and development that is grouped around four projects that were developed in The Patching Zone’s first two years (2008-2010). It highlights the theory and research approach that were applied; the outcomes are illustrated by the team members’ contributions through photo-essays, papers, design sketches and interviews with the stakeholders. *Real Projects for Real People Volume 1*, is especially relevant for researchers, scholars, makers and educators who are interested in a collaborative practice in the field of creative industry and technology.” (an)

## **Collaboration between artists and scientists**

Dombois F 2010. *What Are the Places of Danger Works 1999–2009*. Berlin: argobooks.

“Das Buch zeigt in der Engführung von Theorie und Praxis exemplarisch, wie Kunst und Forschung voneinander profitieren können - und wie sich diese Nähe zwischen zwei Buchdeckeln darstellen lässt.” (as)

## Literature and science

Clarke B, Rossini M (eds) 2010. *The Routledge Companion to Literature and Science*. Abindon: Routledge.

“This collection of forty-four newly commissioned articles from international scholars is the essential guide to Literature and Science Studies. It traces the network of connections among literature, science, technology, mathematics, and medicine from the Ancient World to the present, from Russia to Japan.” (mr)

## Technology assessment

Aichholzer G, Bora A, Bröchler S, Decker M, Latzer M (eds) 2010. *Technology Governance. Der Beitrag der Technikfolgenabschätzung*. Berlin: edition sigma.

“Dicker Proceedingsband einer internationalen Konferenz in Wien 2008. Gibt einen guten Ueberblick ueber das Thema Governance von Technologien.” (mn)

Böschen S, Kastenhofer K, Rust I, Soentgen J, Wehling P 2010. *Scientific nonknowledge and its political dynamics: The cases of agri-biotechnology and mobile phoning*. *Science, Technology & Human Values*, V35, N6, pp 783-811.

“Ein Artikel zu transdisziplinären Dynamiken im Kontext der Agrobiotechnologie-Kontroverse und -regulierung: wie beeinflusst Verwissenschaftlichung Technologiekontroversen, wie beeinflusst die öffentliche Kontroverse die Risikoforschung zu neuen Technologien und welche Form der Governance von Technowissenschaft resultiert daraus?“ (kk)

Kaiser M, Kurath M, Maasen S, Rehmann-Sutter C 2010. *Governing Future Technologies. Nanotechnology and the Rise of an Assessment Regime*. Dordrecht: Springer.

Kastenhofer K, Allhutter D 2010 (guest eds). *Focus: Technoscience and technology assessment. Special Issue*. *Poiesis & Praxis: International Journal of Technology Assessment and Ethics of Science*, V7, N1-2.

“In diesem Sondebund der Zeitschrift Poiesis & Praxis sind Beiträge versammelt, die sich dem momentan vielfach diskutierten Konzept der Technowissenschaft widmen, versuchen es kritisch zu diskutieren und/oder zu schärfen und weiterzuentwickeln. Die Beiträge repräsentieren den momentan stark in Entwicklung befindlichen Technowissenschaftsdiskurs, wobei auch auf die Frage fokussiert wird, wie die Technikfolgenabschätzung auf dieses neue Konzept und die darin postulierte technowissenschaftliche Kondition reagieren soll. Beispielfälle entstammen der Nanotechnowissenschaft, der Robotik und dem Software-Design.“ (kk)

## Technoscience

Kastenhofer K 2010. *Do we need a specific kind of technoscience assessment? Taking the convergence of science and technology seriously*. *Poiesis & Praxis: International Journal of Technology Assessment and Ethics of Science*, V7, N1, pp 37-54.

“Technoscience und TD sind verwandte Themen, wenn es um den Umgang mit ersteren geht. Dieser Aufsatz exploriert, wie eine transdisziplinaere Herangehensweise gefordert ist, wenn es um die Konvergenz von Grundlagenwissenschaft und Technologieentwicklung geht.” (mn)



## **Adaptation to climate change**

Cifdaloz O, Regmi A, Anderies J M, Rodriguez A A 2010. *Robustness, vulnerability, and adaptive capacity in small-scale social-ecological systems: The Pampa irrigation system in Nepal*. Ecology and Society, V15, N3, art39 [online] URL: <http://www.ecologyandsociety.org/vol15/iss33/art39/>.

“Both of these articles blend multiple disciplines in order to understand how local natural resource systems respond to broad scale climate variation.” (lg)

Nelson M C, Kintigh K, Abbott D R, Anderies J M 2010. *The Cross-scale interplay between social and biophysical context and the vulnerability of irrigation-dependent societies: Archaeology's long-term perspective*. Ecology and Society, V15, N3, art31 [online] URL: <http://www.ecologyandsociety.org/vol15/art31/>.

“Both of these articles blend multiple disciplines in order to understand how local natural resource systems respond to broad scale climate variation.” (lg)

## **Environmental sociology**

Gross M, Heinrichs H (eds) 2010. *Environmental Sociology. European Perspectives and Interdisciplinary Challenges*. Dordrecht: Springer.

“The book presents several streams of European environmental sociology and how these have changed over the last decades towards more inter- and transdisciplinary work.” (mg)

## **Contributors**

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