

Conceptualizing protected area research in a transdisciplinary mode

Ulli Vilsmaier

Summary

The search for transdisciplinary forms of knowledge production is currently intensively discussed and experimented in research processes. This contribution aims at outlining different understandings of transdisciplinarity and explores possibilities to conceptualize protected area research (in the following PA research) in a transdisciplinary way. This will be achieved by analyzing different types of PA research and by distinguishing different aim horizons of area protection. The contribution refers to PAs with a legal status and it is based on a survey of research profiles of National Parks¹⁰.

Keywords

understandings of transdisciplinarity, knowledge integration, problem framing, aim dimensions of protected areas, types of protected area research.

Introduction

The discussion on transdisciplinary research as new mode of knowledge production has increased enormously since the 1990s (KUEFFER et al. 2007). It originates from a lack of success in problem solving in particular in fields of human interaction with natural systems (THOMSON KLEIN 2004: 517). Because of its growing complexity and interdependency, disciplinary oriented knowledge production does not have the potential to face the types of problems we are dealing with at the beginning of the 21st century. And even interdisciplinary approaches often do not meet the challenges. As a consequence, the debate on transdisciplinarity disclosed new perspectives on the potential of science and its role in society, exploring new modes of research oriented towards societal problems. Research targets, the architecture of research processes, sources of knowledge and contributing institutions and individuals are conceptualized and integrated in a new way. The debate on and practice of transdisciplinary research is still very young and to some extent unclear (JAHN 2005; POHL & HIRSCH HADORN 2006; ZIERHOFER & BURGER 2007), somehow even contradictory. Therefore, a short overview of understandings of transdisciplinarity will be given, before exploring possibilities and potentials of transdisciplinarity in PA-research.

Understandings of transdisciplinarity

The idea of transdisciplinarity originates from a change of perspective. Research questions within the field of human interaction with the biosphere should no longer arise out of a disciplinary viewpoint but should be derived from actual situations with need for change. Research questions should not be generated primarily out of disciplinary research traditions but out of the 'life-world'. According to HIRSCH HADORN et al. (2008: 30), "there is a need for transdisciplinary research when knowledge about societally relevant problem fields is uncertain, when the concrete nature of problems is disputed, and when there is a great deal at stake for those concerned by problems and involved in dealing with them." Transdisciplinary approaches aim at capturing the complexity of problems, taking into account the diversity of life-world and scientific perceptions, linking abstract and case specific knowledge and constituting knowledge and practices that are capable of solving societal problems (ibid.: 30).

The main difference in the debate relates to the question of how this can be achieved. Some authors consider it a task to be solved within academia. Transdisciplinarity would therefore require a reorganisation of internal structures within science, being identical with 'true interdisciplinarity' that goes beyond temporary cooperation (MITTELSTRAß 2003: 9). It is regarded as an integrative concept that searches to overcome disciplinary isolations on a higher methodological level. On the

¹⁰Sources: Documentations on scientific research in national parks 2005/2006, 2004, 2002, 2000 of the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management; Research concepts of Austrian National Parks and the SNP; Database on Research in European mountain protected areas of the Alpine Network of Protected Areas: http://4dweb.proclim.ch/4dcgi/ProtAreas/en/BuildSearch_ProtArea.

other hand, many authors do not only question the internal structure but also the system of knowledge production as a whole (e.g. GIBBONS et al. 1994; SCHOLZ 2000; THOMPSON KLEIN et al. 2001; ZIERHOFER & BURGER 2007). They question the exclusive academic form of research and advocate the integration of non-scientific perspectives and experiences by integrating stakeholders to research processes. Scientific knowledge production is regarded as one specific form and perspective to frame and analyze a phenomena or problem. Complementary dimensions should be integrated as well to get a more complete understanding and create more useful solutions through mutual learning (THOMPSON KLEIN et al. 2001, STOLL-KLEEMANN & WELP 2008). To many scientists, participatory research has become synonymous to transdisciplinarity. But even if stakeholder integration turns out to be of high importance, it would be a reduction of the potential that the discourse on transdisciplinarity is opening up, reducing transdisciplinarity to participation of stakeholders.

Both, the reorganisation within science as well as contributions of stakeholders will turn out to be necessary instruments in transdisciplinary research. But the key for reorganizing research in a transdisciplinary mode is the (re)formulation of research questions and the relation of research activities to different horizons of purposes. Again, the change of perspective enforces structural changes of research processes and the role of science in society. MAX-NEEF (2005), and earlier JANTSCH (1972, see: POHL & HIRSCH HADORN 2006: 76ff) suggest to organize transdisciplinary research by combining different horizons of questions related to an actual situation. These questions are: What exists? (empirical level); What are we capable of doing? (pragmatic level); What is it what we want to do? (normative level); and: What should we do? or: How should we do what we want to do? (value level).

If we deal with actual situations against the background of the dimensions these questions refer to, research turns out to be more than scientific knowledge production. It is then a democratic learning process, where roles are distributed according to the abilities and experience of the involved groups of society. The research process itself forms part of the required transformation and does not only provide knowledge for others to implement. This approach allows for an overall transdisciplinary research frame, including disciplinary and interdisciplinary research by ordering different horizons of purposes and dimensions of problems. Further, it offers a structure for framing the research field and process, including not only phenomena or attributes of concern but also sources of knowledge (institutions) and contributors (people).

Conceptualizing transdisciplinary PA-research

In order to conceptualize PA research in a transdisciplinary mode, the overall research horizon has to be oriented towards the overall aim of area protection, which is, very generally spoken, a balanced relation of man and biosphere. Viewing the overall aim opens up a frame for integrating particular aims of area protection, even contradictory ones. And it allows for integrating not only empirical questions into the research process, but also pragmatic, normative and value oriented questions. By relating research activities to different aim horizons of area protection more visibility of the importance of PA research activities can be achieved. This can be useful not only for communicating the PA idea in public, but also for participatory approaches in research by making the meaning of stakeholders' contributions to research processes clearer. Further, it has the potential to transform or complement disciplinary or interdisciplinary research. The contextualization of particular research activities to the PA idea by researchers can be strengthened by research-coordinators of PAs. It is one reason among many others why a coordinative process for research activities in PAs is crucial. The outlining of cross sectional issues in research concepts is a constructive step towards the establishment of a transdisciplinary perspective in particular research activities.

This very basic step of framing PA-research according to different aim horizons for developing a transdisciplinary research perspective can be deepened by differentiating types of PA research and exploring their potential for transdisciplinary foundation. Apart from distinguishing between rationalities and organizational forms of research (science/humanities; discipline/inter- or transdiscipline), PA research also differs according to its relation to PAs, being either research *in* PAs, *on* PAs, *for* PAs or context-related research.

Research *in* PAs is generally empirical basic research to investigate the biosphere under no or reduced human impact. The relation to the overall aim consists mainly in providing knowledge on the biosphere for a better understanding of natural phenomena. If participatory approaches are applied, they are primarily context related, aiming at information collection on human impacts for interpretation of research results. Research *for* PAs is oriented towards management tasks. It is based on empirical research results and addresses the pragmatic dimension of area protection. It is linked to the territorial related aims of PAs such as conservation, investigation, recreation and education, addresses clearly defined purposes and provides information for realization. If participatory approaches are applied, they are primarily oriented towards the realization of predefined aims. Research *on* PAs refers to the concept and the project as a whole and studies the

societal and ecological impact of PAs, the realization of the objectives of PAs and critically reflects the conception and realization of area protection. It is an integrative perspective that has the potential to relate research according to all different aim horizons and integrates the empirical, pragmatic, normative and value level. By reflecting on area protection as a societal project that pursues adequate solutions for the man and biosphere relation, the integration of scientific research results, different societal perspectives, experiences and interests is necessary. Thus, research on PAs requires transdisciplinary approaches.

For all steps of transdisciplinary research (problem framing, integration of knowledge and perspectives, implementation of research results) a manifold structural embeddedness of PAs is crucial, in particular on a regional level. Furthermore, it allows for incorporating empirically gained knowledge and management purposes to a wider societal field, including (public) discourses, administrative structures and political institutions. If a constant communication and information exchange is given, transdisciplinary research activities can build on them. Since PAs have an institutional body including the role of research coordination, transdisciplinary research approaches can be advanced through strengthening these structures and roles. Individual researchers or research groups can contribute by stronger contextualizing particular disciplinary or interdisciplinary research activities in PAs, relating them to different levels of purposes of the PA idea. However, the foundation for successfully establishing transdisciplinary research is to respect and to explore the diversity of perspectives, regarding diversity as an advantage, not as a handicap (POHL et al. 2008). And it requires to sometimes leave predefined paths, to search for mutual understanding on different organizational levels (terminology, theoretical foundation, methodology of research, values and norms), and to establish frames for integration.

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Contact

Dr. Ulli Vilsmaier
ulli.vilsmaier@sbg.ac.at

University of Salzburg
Department of Geography and Geology
Hellbrunnerstr. 34
5020 Salzburg