

Responsivity as a transdisciplinary research principle

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The currently emerging culture of transdisciplinary research (TDR) aims at overcoming established gaps between disciplines and societal domains and at embedding knowledge production in heterogeneous horizons of objectives, interests, values and norms. Given this challenging objective, TDR clearly goes beyond traditional forms of science.

The development of TDR can be regarded as a consequence of a series of more or less (r)evolutionary changes in science and the humanities during the last century, often being characterized as the change from modern to postmodern thinking. And it has to be seen in the context of ample societal changes of political and socio-technical conditions, being both, consequence and driving forces for the current search for (re)allocating science in society, transforming relations and adjusting boundaries between established societal domains.

At this stage we are challenged to develop research frameworks and to further methods for TDR, i.e. for problem framing, knowledge integration, knowledge assessment or mediation processes as well as to adopt evaluation procedures, research policies and funding systems. At the same time, the transformation of established internal and external boundaries of science destabilises clearly defined rules and a common recognition of scientific standards. A series of challenges that form part of established discourse traditions in philosophy (of science) and the humanities appear in the centre of empirical practices and challenge researchers from many disciplines. To consolidate TDR as an accepted research practise, the elaboration of an epistemological and theoretical fundament still has to be fostered.

In this context, the need for establishing a common rationality, which allows for *creating space for integration* in embedded knowledge production, is often claimed. However, what does it mean to establish a common rationality? A common rationality in TDR sounds a little bit like a 'theory of everything'. Looking into a specific discipline, several rationalities can be identified. One can also observe changes of rationalities in one's own life. On the other hand, any form of communication, collaboration, and in particular integration, requires a minimum of commonality and of common ground.

This contribution focuses on the *position* of the researcher with respect to the research field, and the correlation of this position and the quality of *relations* between representatives of different disciplines and societal domains is discussed. By unfolding the '*geometry*' of research constellations, an attempt is made to theoretically frame the widespread qualitative diagnosis of successful TDR: that the quality of relations between people, the attitudes of individuals and the personal openness are of high importance for the research process and

outcomes. In the discourse on transdisciplinarity these aspects are highlighted, but generally they are ignored or regarded as research periphery.

Hirsch-Hadorn stresses the mutual learning aspect that is necessary for solving societal problems and underlines the importance of “reflections, the transformation on attitudes, the development of personal competence and ownership, along with capacity building, institutional transformations and technology development.” (Hirsch Hadorn et al. 2008, 25). Nowotny points out the mutual dependency between the epistemic core of science and the institutional practice of research. “Changes on the one side have consequences on the other. Together they specify by what scientists are driven, with which motivation, passion and distance they do their work and which aims they envisage thereby.” (Nowotny 1999, 30; translation UV). In the context of boundary-work, Oliver Lieven and Sabine Maasen identify an increasing challenge of management abilities of persons (Lieven and Maasen 2007, 36). Exploring requirements for integration in TDR Christian Pohl states: “The first step for such integration [diverse scientific and societal views] is to acknowledge, to respect and to explore the diversity of perspectives.” (Pohl et al. 2008, 414).

With these quotes it is briefly outlined how people (as human beings, not as factors) appear in the context of TDR: On the one hand, transdisciplinarity focuses on being research *for* people, which is expressed by the ‘live-world-orientation’. It is a commonality across many different transdisciplinary approaches, but not an exclusive characteristic of TDR. On the other hand, transdisciplinarity aims at critically reflecting (and practising) research as research *from* people, in particular by questioning the exclusive status of the scientist in knowledge production. Especially, when being confronted with different cultures of cognition, irritation can be provoked which proves the scientist to be a human being. TDR further acknowledges the context dependency of knowledge production and cognition in terms of cultural, social and individual contexts, the latter being expressed through terms such as ‘personal attitudes’, ‘personal competences’, or ‘respect’. And it provokes a critical reflection on the subject/object division in research. By aiming at joint research and mutual learning we are challenged to acknowledge the subject status of the (former) research ‘object’ (Vilsmaier 2009).

In consequence, the position of the researcher has to be reformulated in TDR. Compared to a traditional modern understanding of science, based on a principal separation between the subject and the object, researchers in TDR form a constitutive part of their research field. However, it is not in terms of a constructivist worldview that I am referring to the constitutive role of the researcher. Beyond the opposing positions of essentialism/relativism or positivism/constructivism, which can be regarded as basic pillars of modern/post-modern worldviews, the research constellations, which emerge in TDR allow for a distinct

characterisation of the relation between the subject and the object of research. Researchers themselves are constitutive parts of the research field. In their orientation towards the other (in terms of disciplines, societal domains, but also as human beings) they create the transdisciplinary research field, which displaces the former research object. The inherent 'geometry' is founded in complementarity which means that each entity (again: disciplines, societal domains and humans as individuals) is *discrete* (german: *eigenständig*) in terms of having an own identity that creates separation and therein boundaries, but not *exhaustive* (german: *vollständig*) (Koch 2004; Röhrle 2001). The notion of complementary, introduced by Nils Bohr (1958) in a different context indicates the entanglement of two properties, which apparently are contradictory (mutually exclusive), like autonomy and dependency. It can be applied to indicate the embracing of apparently separated entities, if approaching them from a different perspective. In the context of transdisciplinary research constellations, entities of disciplines, societal domains as well as researchers as human beings are complementary. They have an own identity, which is based on difference. At the same time, they are constitutive for each other. In this perspective, each discipline, each research culture or societal domain appears to exist only against a complementary background: 'the other(s)'. Bringing this to an ultimate consequence, Erich Hamberger argues that "[s]cientific insight as a cultural act occurs transdisciplinarily as it emerges out of a context of interpretation located between scientific and extra-scientific cognition." (Hamberger 2004, 489).

All these are simple and in the context of postmodern thinking widespread thoughts: Identity only exists in difference; No self without other; No culture, no discipline, no societal domain without others. However, if we translate these insights to the 'geometry' of research designs, with any separation a dimension of relation appears like the two sides of a coin. The transdisciplinary research field appears as space in-between the different entities, created by the complementarity of separation and relation. What makes the difference is the *quality* of the relations. Are these relations 'naturally given'? Are they constructed by a dominant entity? Are they primordially self-constructed or is the origin of any form of identity a response to 'the other'?

Bernhard Waldenfels has developed a *responsive rationality* which consists of a thinking which is neither founded in unity nor in difference. It undergoes the dualisms which is still inherent in many postmodern discourses when they aim to overcome modernity. It is responsive in terms of perceiving and conceptualising the entanglement of the self and the other. It is characterised by a categorial in-betweenness of pathos (german: *Widerfahrnis*) and response (german: *Antwort*) (Waldenfels 1997, 2002). Any form of expression is regarded as an answer to something or someone – but it is not a simple temporal relation of before and after (german: *Vorgängigkeit – Nachträglichkeit*). The something or someone only

reveals as a complete phenomenon or person being perceived, heard or behold (Waldenfels 1997, 2002, 2007). There is an active and a passive side on both 'ends' of the stick, which seems to be a fundamental for integration as it provides *commonality*. A responsive rationality allows for an understanding of the self (and dimensions of identity) which is characterised by an oscillation between self-reference and self-detractedness. Therefore it is an open concept with clear boundaries (Viltsmaier 2009). This openness is an essential foundation for TDR as well as the limitations which allow for acknowledging distinct responsibilities and competences, horizons of purposes, values and norms.

When translating this entanglement of the self and the other to dimensions of identity related to scientific activities, we can see that any type of knowledge production, any discipline or cultural identity only exists against a background, a contrast, an opposing phenomenon or system. In other words: it is constituted in in-betweenness. A *responsive rationality* allows for acknowledging the complementary character of different epistemologies, types of knowledge, interests, objectives, values or norms as no singular phenomenon, category or norm exists independently. A responsive worldview contains commonalities for creating space for integration, mutual learning and the production of knowledge at the interface of disciplines, societal domains and human beings.

What may have sound very abstract so far, finds its principal implementation in a very concrete practice: It can simply be realized as a human attitude. However, for establishing a new culture of science it is also necessary to elaborate a theoretical concept of a very basic human attitude for living and acting in community - the need for living openness and acknowledging (principal) boundaries to create space for integration. But as Heinrich von Kleist shows in his essay '*Über das Marionettentheater*': The door behind us is closed. We've to make all the way round the globe to see if there's a backdoor to paradise left open.

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