D4 Commentary on the contribution of Bert de Wit

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Introduction

First of all, I'd like to say that I found Bert de Wit's presentation very interesting and informative. Since I agree with most of what was said by Bert de Wit my commentary will be mainly directed at a few points which I think can be more sharply focused and emphasized. To do this it will be necessary to shift the perspective a bit and look somewhat differently at the issues raised by Bert de Wit concerning the need to "Bridge the Gap" between science, society and policy and overcome the mismatches between this areas and their actors.

Before turning to my comments on his contribution I briefly would like to touch on the background of my remarks.. The Institute for Social-Ecological Research (ISOE) is, as its name already indicates, a *research* institute. We understand ourselves as "boundary workers" within science: In doing transdisciplinary research we closely link the generation of new knowledge with the work of mediating between science, policy makers and societal actors. Moreover, the knowledge we produce is meant to be useful for dealing with precisely those kinds of problems Bert de Wit refers to as "unstructured problems."

The institute's long-time experience in dealing with exactly those kinds of problems is what shapes my remarks here today. This experience has arisen for the most part within a German context; nevertheless, I believe many of the lessons drawn from the German experience are applicable in general.

Bridging the gap from the perspective of transdisciplinary research

Okay, with this as background in mind, let me now turn to my comments. I will focus on the model of the interface and its mismatches, presented by Bert de Wit, and the concept of boundary work. To me it appears that the Bert de Wit's model is basically an input-output model: policy makers and societal actors deliver the problems and science delivers knowledge for problem solutions in terms of "advice" for the political or societal realm – often with the support of intermediary agents such as advisory councils or commissions. In other words: the model assumes a rather clear distinction between the policy and the science spheres. Problems arise when policy makers or societal actors reject the advice. And the burden, then, of mediating between these two spheres with their own logics and discourses lies with the intermediary institutions and persons. Their job is to find the right scientific expertise, working with their own logic and discourse, to deal with the problems delivered by politicians and societal actors, and then to present the scientific results and technical proposals produced by researchers and engineers in a language – a discourse and a logic – understandable to the general public. Yet, in the public debate these two spheres are seen as strongly overlapping: Politicians are dependant on science and science itself is more and more (willingly) exploited for political or societal interests. The challenge for boundary work, as I see it, now is to simultaneously conceive the relation between policy and science as both necessarily separated but at the same time strongly interlocked in interdependence.

So my first point is: Effective boundary work needs a revision of the self-conceptions of science and policy, that is: mutual recognition of the difference, working within self-

limitations, co-producing knowledge in a clear conception of the respective roles and being explicit about the limits of the specific knowledge of each realm. Ignoring this might lead to blockades which have nothing to do with the actual matter.

Coming back to Bert de Wit's model: It covers a great deal of the interactions between scientific research, on the one hand, and society and politics, on the other. However, from the perspective of transdisciplinary research this model becomes a simplification when it is about dealing with "unstructured problems" – problems which are characterised by complexity, uncertainty, scale differences and the subjectivity of problem perception. These problems require a transdisciplinary mode of production and assessment of knowledge.

Now the concept of transdisciplinary research is not in itself radically new: there have always been societal problems the nature of which, *in fact*, required going beyond the institutional and epistemological boundaries separating a given set of scientific disciplines (whether this transcending was *explicitly* acknowledged in the past is an interesting question I can't look at here). We may refer to this as *internal transdisciplinarity*. However, urgent problems like sustainability problems, climate change et cetera are "unstructured" precisely because they not only require a transcending of disciplinary boundaries within the sciences (and in particular those between the social and natural sciences) but also a transcending of the boundaries between the logics and discourses of the sciences, on the one hand, and those of the life world (including politics and economy), on the other. This we may call *external transdisciplinarity*.

So my second point is: In bridging the gap between science and policy from a transdisciplinary perspective, the nature and above all the potential and the efficiency of boundary work becomes clearer. Because now we can see that the relevance of a problem is not given per se, but is worked out in normatively framed discourses between science and policy. Here the main importance lies in the inclusion of the relevant (problem specific) knowledge and interests in a collaborative process. It has to be noted here that defining the problem (or the agenda, or the order for advice) means at the same time defining a set of possible solutions. The question who defines the problems is thus of utmost importance. Bert de Wit's model seems to conceive problem definition as a top-down process. I therefore would like to strengthen his argument in suggesting that transdisciplinary processes of dialogue and cooperation are more suited to express what is relevant in a given problem-context. It is in fact the joint production of knowledge and its assessment which is the core concept for organising the science policy interface.

But who are the boundary workers within such a transdisciplinary process of knowledge production and assessment? Possibly, the same intermediary organisations such as scientific advisory councils and commissions that (often successfully) deal with the more structured problems. However, it seems more appropriate to conceive everyone who participates in the process of transdisciplinary collaboration – scientists, end-users, stakeholders, policy makers – a boundary worker. For all of these actors are supposed to participate in the reflexive, iterative process of defining a problem precisely enough so that it may be transformed into a research object suitable to being cognitively processed according to the procedural logic of the sciences. But then the question is: do boundary

workers in this wider sense posses the necessary skills and knowledge to face their responsibility? Moreover, what changes, if any, must be made in the institutional, structural, legal and individual conditions of their action?

Bridging the gap: two concrete suggestions

I want to close my commentary here with a short and tentative answer to some of the questions I raised. Firstly, from the discussions of Mode 1 and Mode 2 forms of knowledge production we can already see a movement towards transdisciplinary research. However, our experience with German research policy is that this is being pursued rather half-heartedly. Where it already takes place it is not sufficiently acknowledged and supported – despite promising new institutional arrangements and bundling of competences and experiences. What is needed is a much higher level of investment in new research capacities and structures that are explicitly transdisciplinary in nature. Addressees are not only governmental funding strategies but also inner scientific institutions like the German Research Foundation – or on an European level DG 12 and the European Research Council.

Secondly: We can see that there is a need for intermediary organizations from the fact, that there are so many of them. At the same time, abundance of these organizations raises the question of their efficiency. To meet this problem, the scientific advisory councils and commissions need to be rearranged in a way that makes transdisciplinary thinking more a part of their everyday logic. Here a move away (at least in part) from the “leading experts” types of organisations structured around discipline-bound “top scientists” and their discipline-bound staff towards problem- and project-oriented teams with strong transdisciplinary experience would be a good way of strengthening society's capacity for dealing with the increasing number of “unstructured problems” it is faced with.

As a final suggestion I think it would be helpful to establish opportunities (like education programs) and to invest time (and money) in order to familiarise policy makers and societal actors with the basics of transdisciplinary cooperation and collaboration at the interface of science, society and policy in different arenas of agency and decision making.