Social robustness as analytical tool or normative standard?

A comment on Monika Kurath „Nanotechnology Governance. Accountability and Democracy in New Modes of Regulation and Debate"

Janus Hansen (Copenhagen Business School, Denmark)

A recent issue of STI-Studies (vol. 5, no. 2) contained two articles, which both addressed the so-called 'Mode 2-diagnosis' by Nowotny et al. (2001). In particular, they both made reference to the affiliated concept of 'social robustness'. Given this topical overlap, the editors of STI-Studies encouraged the authors of the two articles to provide comments on each other's paper. My own paper (Hansen 2009) is concerned primarily with the theoretical consistency and analytical value of the concept of 'social robustness' for comparative analysis of public engagement processes, and was conceived as an attempt to lay a conceptual ground for ongoing empirical work. In this respect, Monica Kurath's paper is ahead of mine, as it presents a completed comparative study of nano-science governance based on the concept of social robustness (Kurath 2009). In my view, Kurath's paper thus constitutes a fruitful step beyond my own reflections. I am pleased to note that her analysis indeed addresses a number of the dimensions I suggest as central for empirical inquiries in the final pages of my paper, such as institutional embedding, procedural design, and discursive dynamics, and does so in a grounded and hands-on manner. However, her more operational approach to questions I pose only at an abstract and analytical level also illustrates some of the caveats I believe are entailed in applying the concept of 'social robustness' for comparative empirical analysis. I shall discuss some of these in the following. However, I should emphasize that I am keenly aware that Kurath has faced the more challenging task of leaving the academic office and confront theories with actual, social practice. This inevitably makes matters more complicated compared to isolated theoretical reflection. Therefore, the following comments should be read as constructive suggestions for further work, not as a polemic against the work done by Kurath.

I divide my comments in three sections: The first one deals with the epistemological status of the concept of 'social robustness'. The second pertains to the comparability of the cases presented in Kurath's paper. The third regards the question of how more explanatory or interpretive value can be gained from analyzing this kind of material. However, I shall start with a preliminary observation on Kurath's adoption of the concept of social robustness.

Originally, the term 'social robustness' in the Mode 2 diagnosis pertains to novel demands made on (academic) knowledge production from the surrounding society (claiming that the

borders between scientific knowledge production and 'society' are eroding). Kurath moves the application of the concept from the domain of (scientific) knowledge production to the realm of (nano-science) governance. She argues that "The openness of social robustness well matches the analytical needs of a study of societal processes or activities beyond science and academic knowledge production that include regulation, deliberation, public engagement and governance" (ibid. 90). I consider this move unproblematic. In fact, perhaps the concept is more suitable in the realm of governance than in knowledge production per se. However, with this move the concept also loses its radical edge, when compared to other conceptualizations of the interface between science and society. Some of the appeal – but also much of the provocation – of the Mode 2 thesis lies in the claim that the 'epistemological core' of contemporary science is empty (Nowotny et al. 2001; 179). This claim is important as normative underpinning of the calls for a reconfigured and less hierarchical interaction between experts and lay-people. Kurath thus navigated around some of the epistemological intricacies affiliated with the Mode 2 diagnosis by looking 'only' at governance, as it is much less controversial to claim that governance of science – as opposed to science proper – must be open to inputs from the outside, in order to be 'socially robust'. Nonetheless, my first comment regards the epistemological status of the concept of social robustness, but from a slightly different angle.

Social robustness – empirical reality of normative standard?

Some of the criticism that has been leveled against the Mode 2 diagnosis pertains exactly to its epistemological status (e.g. Shinn 2002). The authors have been criticized for oscillating between, on the one hand, claiming to describe a shift from a Mode 1 to a Mode 2 knowledge production, as a set of ongoing social processes (empirical reality), on the one hand, and presenting a normative standard on the other, an ideal to be aimed for in order to stimulate innovation, mitigate risks and enhance legitimacy of techno-scientific development.[1] Kurath decisively opts for the second option and makes 'social robustness' the normative standard against which her cases are measured. She constructs a social robustness-index composed of measures of five analytical dimensions ('contextualization', 'stability', 'acceptability', 'social knowledge' and 'evaluation'). Also, this choice is a perfectly legitimate move, although the methodological aspects of the index construction and scores can be discussed.[2] In my eyes, however, this use of the concept of social robustness raises two questions, which are not addressed in Kurath's paper. The first has to do with how we interpret the performance or 'compliance' with the standard. The second has to do with why this particular standard in this particular operationalization is selected and how it relates to other possible standards, which could perhaps be applied in an equally meaningful manner to assess the cases.

Out of the total of 20 either 'regulatory' or 'public-engaging' events or processes analysed in the paper, most score rather poorly on the social robustness-index. According to Kurath

---

[1] As I noted in my paper, the Mode 2 thesis seems in particular to be embraced by policy makers for its normative implications, rather than its empirical substantiation, a point that seems to be supported by Kurath's findings.

[2] The social robustness index consists of 5 components, which are each assigned one of three values (-1, 0, 1, but also at some point 0.5) and summed. The score system, the fact that the five dimensions are given the same weight and the principles of score assignments, are all issues that could be given further consideration. However, I accept that for the sake of simplicity pragmatic choices need to be made.

this is a cause for concern regarding the democratic accountability of the resulting governance of nano-science. I concur this is a valid and pertinent concern. However, this result could also lead us to question the viability of the concept of social robustness from an analytic rather than a normative angle. We could ask empirically whether 'social robustness' is in fact a good tool to grasp the empirical reality of those processes. The very mixed scores on the index could thus be used to question the empirical viability of Nowotny et al.'s claim that we are moving towards a Mode 2 relationship between science and society. Perhaps some of the processes were instigated with entirely different purposes than achieving 'social robustness' as envisioned in the Mode 2 thesis. In that case, a low score on the social robustness-index may not be an entirely fair or relevant evaluation of the processes and organizations examined, and we may need other tools to get an analytical grip on the intrinsic dynamics and external effects of these processes.

When it comes to public engagement with technology alone (a subset of Kurath's cases) there is a lively discussion on how best to evaluate such processes.[3] Kurath's social robustness index might benefit from being confronted, compared or supplemented with other evaluative criteria discussed in the literature (see e.g. discussions in Rowe and Frewer 2000, Renn et al. 1995, Abels and Bora 2000, Horlick-Jones et al. 2007). When it comes to evaluation of 'governance' in the broader sense of processes that move beyond conventional 'government', the number of frameworks and

approaches on offer are even more abundant (to name just one contribution to this discussion, see Borrás and Conzelmann 2007). The point is not that the social robustness index is flawed, but it appears somewhat arbitrary and could be qualified through a more elaborate confrontation with normative and conceptual alternatives, which might reorder the scores of the cases.

Rendering cases comparable, managing diversity

My second comment pertains to the comparability of the cases entailed in Kurath's study. In my own paper I suggest that comparability is not an intrinsic characteristic of cases. Rather comparability must be established through the researcher's calibration of the distinctions through which selected aspects of the social world are observed. Comparative research therefore needs to balance the need for similarity (selecting cases of the same phenomenon) and distinctiveness (ensuring enough variation is observable), in order to establish worthwhile comparisons. Kurath argues that her cases are similar-in-kind in so far, as they are all examples of a novel approach to the regulation of nano-science. As such, all the cases allegedly embody or express a general shift from (hierarchical) 'government' to (network-like or deliberative) 'governance'. I find this overall framing of the cases convincing enough for the present purpose. Yet, one may nonetheless wonder, if perhaps there is too much diversity among the selected cases to make analytically fruitful comparisons. The cases are not only drawn from four different national, one supranational and one international context, they also span both public and private initiatives (or what should perhaps more appropriately be labeled corporatist) and seem from the description in the annexes to have quite different aims, serve quite different purposes for their sponsors

---

[3] Personally, I think that there has been a tendency for the discussion on normative standards to take precedence over actual empirical analysis of public engagement activities, which means that the accumulation of knowledge and experiences across cases are less than satisfactory.

and comprise very different modes of communication. As a consequence, Kurath furthermore distinguishes between cases as 'soft law measures', 'self-regulatory initiatives' and 'public engagement projects'. All in all, this amounts to quite a lot of variation on quite a lot of dimensions among the 20 cases included in the study. As a consequence, it is not entirely clear what kind of lessons can be drawn from the performance scores assigned to the cases. In a next step it may perhaps be recommendable to focus on a smaller subset of the cases, holding some of this variance constant, which would allow for more in-depth analysis, including more contextual features. This brings me to my third and final comment.

Learning from comparative analysis

In my paper I comment critically on the fact that a lot of research on public engagement is either dealing with normative reflections or focusing narrowly on single cases, thus ignoring the potential of comparative research. In my view, one strength of Kurath's paper lies in the fact that it presents and compares a significant number of cases. However, processing such a rich material in a journal article comes at a price. In this case, the price is that the empirical sections of the paper have a largely descriptive and classificatory nature. This is perfectly respectable, but hopefully the effort will not be terminated here. In a next step it would be nice to see more of an explanatory or interpretive effort, to account in more detail for (perhaps selected aspects of) the similarities and differences among the cases. How can the variance covered by the cases be interpreted or explained? For instance, what difference does it make for a governance initiative whether it is organized by a private organization/association compared to a state agency or an international organization? This will likely impinge on both the public

legitimacy and the policy impact of the procedure. Similarly, is it possible to establish any (systematic) effects of the national context, in which the procedures are embedded? It seems reasonable to expect that they are both shaped by and play into different institutional settings and political cultures. It is mentioned in a footnote (note 8, p. 91) that the aim of the study was to undertake a transatlantic comparison. But this comparative perspective does not really appear in the analysis. In my own paper I argue that systematic comparative analysis of processes of public engagement should form an important way forward in our understanding of the pros and cons of public engagement. Therefore, I would welcome an attempt to further examine differences and similarities across the cases in a more interpretive and/or explanatory fashion. The ambition is already present in the paper as Kurath argues that

"Questions will focus on the ways governance has been embedded in social, cultural, political and historic contexts, and their relations with current policy and technology discourses, which include environmental, health and safety (EHS) issues" (p. 91).

However, one may wonder whether the operationalization of this dimension in questions about whether the regulatory schemes are based on 'standards' or 'principles', and whether the public engagement processes are focused on 'information provision' or 'deliberation', actually provides enough information to address the question of contextualization satisfactorily. In any case, the measurement stops short of making any kind of causal inferences, which in my view should form a desirable next step. This may, however, require conceptual and methodological tools beyond what the Mode 2 framework delivers.

Concluding remarks

Kurath summarises her analysis in the following manner:

"These findings contest the idea that deliberative governance projects and public upstream engagement in NST exemplify a paradigm shift in techno-political discourse and will lead toward the more democratic development of technology that is advocated by proponents of the upstream engagement approach ... In fact, governance projects still appear to limit public engagement to values, and social and ethical matters, rather than to expose expertise to scrutiny..." (p. 102).

I believe this conclusion is warranted and it corresponds well with my own observations and concerns regarding the actual impact of the discourses about expanded public engagement (e.g. Hansen 2010). It certainly should give rise to normative concerns when "political responsibility is distributed and deliberated among a variety of actors in different societal domains" (ibid.), but no actor or institution can be held democratically accountable. Indeed this would appear as an empirically grounded example of Ulrich Beck's catch phrase of 'organized irresponsibility' (Beck 1999).

However, looking only at cases which supposedly embody this alleged new mode of governance we do not learn anything about what remains of conventional 'government' in the field of nano-science. Do these novel processes of governance replace conventional government completely, or are they rather layered on top of a more conventional regulatory structure? If so, is this a good or a bad thing, given the somewhat questionable performance of the processes surveyed for their ability to establish social robustness?

This last question may also serve as a call for conceptual and methodological self-reflection. If we find that governance processes do not deliver what some expect in terms of legitimacy and rationality gains, is it then necessarily a sign that democratic control of techno-scientific dynamics is being undermined? Or is it perhaps an indi-cation that existing institutions and organizational arrangements of governance are more resilient than some scholars currently suggest.[4] While we should certainly be aware of the kind of democratic problems identified by Kurath, we should also ask whether the government/governance distinction constitutes mutually exclusionary categories and whether the concept of social robustness is an adequate and sufficiently sensitive tool to analyse the ongoing developments at the interface of techno-science, politics and the larger public.

References

Beck, U. (1999) *World Risk Society*, Polity Press, London

Bora, A. and Abels, G. (2004) *Demokratische Technikbewertung*, transcript Verlag, Bielefeld.

Borrás, S. and Conzelmann, T. (2007) Democracy, Legitimacy and Soft Modes of Governance in the EU: The Empirical Turn', in *Journal of European Integration*, Vol. 29, no. 5, pp. 531-48.

Hansen, J. (2009) 'Mode 2, Systems Differentiation and the Significance of Politico-Cultural Variety. Reflections on the theoretical foundation of comparative analysis of public engagement practices', in *STI-Studies*, Vol 5, pp. 67-86.

Hansen, J. (2010) *Biotechnology and Public Engagement in Europe*, Palgrave-MacMillan, Basingstoke.

Horlich-Jones, T. et al. (2007), *The GM Debate. Risk, politics and public engagement.* Routledge, London.

Kurath, M. (2009) 'Nanotechnology Governance. Accountability and Democracy in New Modes of Regulation and Deliberation, in *STI-Studies*, Vol. 5, pp. 87-110.

---

[4] Kurath herself seems to be leaning towards this interpretation, when she argues that,"... the notion of a boundary separating science and the public into two societal actors on either side of an expert/lay divide, and the focus on old contrast structures that further set a unified science and an illiterate public in opposition, persist in most of the projects" (Kurath 2009: 102).

Nowotny, H., Scott, P. and Gibbons, M. (2001) *Re-Thinking Science*, Polity Press, Cambridge.

Renn, O., Webler, T., Wiedemann, P. (eds.) (1995), *Fairness and Competence in Citizen Participation: Evaluation Models for Environmental Discourse*, Kluver Academic Publishers, Dordrecht/Boston/ London.

Rowe, G. and Frewer, L. (2000) 'Public Participations Methods: A Framework for Evaluation', *Science, Technology & Human Values*, vol. 25, pp. 3-29.

Shinn, T. (2002) 'The Triple Helix and New Production of Knowledge: Prepackaged Thinking on Science and Technology', *Social Studies of Science*, vol. 32, pp. 559-614.