

environmental issue became a full economic issue as the controversy of climate change replaced that of acid rain in the end of the 1980s. The vulnerable nature at the heart of the issue was transformed from national to global, and the political technology advocated by Norway in the international negotiations was a system of climate quotas based on marked economy.

In examining the history of Norwegian environmental politics, the book represents a new way of construing 20th century Norwegian history. By employing the term of political technologies to trace the history of environmental politics, Asdal investigates into the more general history of Norwegian politics. This relation to more traditional historical literature is important for her approach in that it not only involves the transportation of ideas from science and technology studies and the field of governmentality studies into the field of Norwegian history – it brings something back as well. Most importantly, and this is one of the definite strengths of the book, Asdal approaches the origin and development of environmental politics by studying its history in empirical detail. By doing this, she nuances and criticizes some of the more theorizing and philosophical work on politics and its relations to nature and science within both science and technology studies and the field of governmentality studies. By reference to Bruno Latour's argument that Nature by way of scientists short-circuits the political

process, Asdal argues instead that it takes a great deal of effort to make nature a relevant object of government. Further, she argues that nature, once established as a political object, is rather unstable and that it might very well get ignored in favor of for example economic considerations. Additionally, she shows empirically how nature and science can open a political process to new actors and even democratize a formerly closed process, rather than short-circuit it. Considering the political technologies of numbers, Asdal nuances the weight put by Peter Miller and much of the governmentality literature on the power of numbers as a powerful tool for government. She shows empirically how it might take a great deal of effort to establish such a political technology of numbers, and that it might not work as planned or work at all.

Michel Callon, Pierre Lascoumes and
Yannick Barthe

**Acting in an Uncertain World: an
Essay on Technical Democracy**

2009, MIT Press, 301 pp.

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When I started reading the book by
Michel Callon, Pierre Lascoumes and

Yannick Barthe with the idea of writing a review of it, my constant feeling was one of dealing with an extremely relevant theme, that is the relationship between delegations in representative democracy and techno-scientific issues that challenge the structure of delegations in its current shape. Moreover, the more I was engaging with the emergence of hybrid forums, the social spaces of relations between what the authors call “secluded research” and “research in the wild” where the consolidated knowledge and the political decision making are questioned, I was continuously attracted by the book argument as a theoretical tool to investigate the case of the High Speed Train between Turin and Lyon. That looks to me as a typical case of a “concerned group”, a group of people “alerted by unexplained phenomena which concern and affect them, [that] decide to make problematic events visible and undertake a primitive accumulation of knowledge” (82). Referring to one of the books that the authors point to, Latour's *Politics of Nature* (2004), concerned groups are defined through their ability to act at the stage of introduction of perplexity on the possible worlds and collectives populating contemporary society. They do not limit themselves at the stage of perplexity because, through what the authors called “primitive accumulation of knowledge”, that is the process of classifying unexplained phenomena “according to their similarities or dissimilarities” (81), they also engage

in the two processes helping to overcome uncertainties: the exploration of possible worlds and the constitution of the collective. According to the authors, the engagement of concerned groups in these processes, substituting secluded research (science and technology done by professionals closed in their laboratories and professional communities) with collaborative research (when research professional engage with research in the wild, the one emerging from people in context different from professionalism) and changing the process of construction of the collective, from a process of aggregation of the “formally identical” (votes) to a process of composition of what is “specific and singular” (voices), is what allow the passage from “deliberative democracy” to “dialogic democracy” (134-135). In one sentence, I can describe the book as entirely devoted to investigating such passage, both theoretically and with a rich set of examples, from nuclear waste to AIDS, and to show how the passage acts as a form of “democratization of democracy”, topic that closes the book in Chapter 7 and that is taken over since the beginning of the book, that is dedicated “to all those who, by inventing technical democracy, re-invent democracy”. But how do the authors develop their argument? They do that through seven chapters. In chapter 1, “Hybrid Forums”, the author defines such forums as “open spaces where groups can come together to discuss technical options

involving the collective, hybrid because the groups involved and the spokespersons claiming to represent them are heterogeneous, including experts, politicians, technicians, and laypersons who consider themselves involved” (18). In this chapter, hybrid forums are seen as a result of actions undertaken by concerned groups in situations of uncertainty, one of the key concepts of the book, that is defined as the situations in which “science often proves to be incapable of establishing the list of possible worlds and of describing each of them exactly” (21), that is, to pick up one of the strongest definitions of the book, “We know that we do not know, but that is almost all that we know” (ibidem). In short, to pick up the topic of Chapter 2, secluded research, hybrid forums emerge when science faces overflows, when the knowledge of secluded research is unable to foresee all the states of the possible world and all the potential compositions of the collective. Concerned groups are the subjects able to make the overflows visible, to make them part of the collective, and to be debated and discussed at a level wider than the one of secluded research, that is to be discussed in the wild (the characteristics of research in the wild are discussed in chapter 3). Dialogic democracy is the form that the cooperation between secluded research and research in the wild can take, and it is explored in Chapter 4, in particular with one of the main take of the book: democracy is a matter of procedures, and hybrid

forums act on the mechanisms of delegation through rethinking the concept of representation. From the delegation to secluded research in order to establish the state of possible worlds to confrontation and cooperation, from the delegation to parliaments in order to aggregate the collective, to a process of composition of the collective itself, through the voices of concerned groups, therefore involved both in the research process and in the political one. Only fostering procedures that allow the emergence of hybrid forums, according to the authors, is possible to engage in the already cited “democratization of democracy”, and to search for a “common world” (in fact, the title of chapter 4 is exactly “In Search of a Common World”). A question remains unanswered, that is “where does dialogic democracy intersect the process of research?”, and here stands the more theoretically deep contribution of the book, unfolding between chapter 2 and chapter 3, that is conceptualizing research as a process of Translation, with a caps T, done of three minor translations: adapting the research problem in the world to the scale of the laboratory (translation 1), processing it through the laboratory work (translation 2), and bringing it back to the world at large (translation 3). The contribution of the book is to analyze how hybrid forums displace and enrich the process of Translation, and it is therefore a clear Actor-Network Theory account of the relationship between secluded research,

concerned groups, procedural and institutional arrangements.

What qualifies the advancement brought by the book is the introduction of the concept of measured action, to which is dedicated the entire chapter 6. Such concept is rooted in the fact that “actors avail themselves of the means to be able at any moment to return to abandoned options, and that evaluations are constantly revised in terms of new knowledge and points of view” (192) and it finds an empirical existence in what is known as the “precautionary principle” (ibidem), adopted as policy line in many EU contexts, and that applies to situation of uncertainty. This chapter is also the one that shows the weaknesses of the analysis carried out in the book. The whole chapter looks like the trial to convince the politicians (and the general public) to open up the space for hybrid forums, and dialogic democracy based on them, through the undermining of opposing arguments, more than through an empirically sounded discussion on under what conditions the hybrid forums can be established. Shortly, it is more advocacy than analysis. This is why, going back to the High Speed Train between Turin and Lyon, the book has a low explanatory and interpretative power: the conceptual tools it provides are good at describing the initial phase of the emergence of the concerned group opposing the train (like solving the uncertainties related to the effectiveness and the effects of the train itself) but they are insufficient

in order to understand what were the conditions obstructing the strong concerned group in bringing a dialogically democratic process into the controversy, that remains in the domain of delegative processes.

Reference

Latour, B. (2004) *Politics of nature: how to bring the sciences into democracy*, Cambridge, Harvard University Press.

Science, Design and Everyday Life

Donald A. Norman

Living with Complexity

2011, MIT Press, 298 pp.

and

Matthias Gross

Ignorance and Surprise. Science, Society and Ecological Design

2010, MIT Press, 240 pp.

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New technologies do not just consist of artifacts but perform as social design acts, so shaping and re-ordering people's everyday life.