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Article

Closing the Future: Environmental Research and the Management of Conflicting Future Value Orders

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Abstract

This paper examines a struggle over the future use of Nordic forests, which took place from 2009 to 2012 within a major research program, Future Forests—Sustainable Strategies under Uncertainty and Risk, organized and funded by Mistra, The Swedish Foundation for Strategic Environmental Research. We explore the role of strategic environmental research in societal constructions of long-term challenges and future risks. Specifically, we draw attention to the role played by environmental research in the creation of future images that become dominant for how societies structure action for the long term. We also show that this process is on several accounts problematic. Research labeled “strategic” or “relevant” is intended to manage long-term risks and challenges in a sustainable way, by taking into account the “open” and “plural” nature of

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the future. The case of Future Forests suggests, rather, that by contributing to the emergence of dominant future images, environmental research is entangled with a process of gradual consensus creation around what may be highly selective or biased narratives of the long term, which may conceal or postpone key forms of future conflict.

Keywords

environmental practices, epistemology, futures, alternative life forms, politics, power, governance, space/place/scale dynamics

Introduction

This paper examines a struggle over the future use of Nordic forests, which took place from 2009 to 2012 within a major research program, Future Forests—Sustainable Strategies under Uncertainty and Risk, organized and funded by Mistra, The Swedish Foundation for Strategic Environmental Research (see <http://www.futureforests.se>). While the program continued until 2016, we studied the planning, setup, and initial years of work on what was intended to be an ambitious futures-oriented research platform taking into account the existence of a plurality of images surrounding the future use of forests, from preservation of biodiversity to continued extraction. We draw attention to the role played by environmental research in the creation of future images that become dominant for how societies structure action or *inaction* for the long term and to what we propose is a problematic mode of coproduction between environmental research, the policy agenda, and industrial interests. Research labeled “strategic” or “relevant” is intended to manage long-term risks and challenges in a sustainable way, by taking into account the “open” and “plural” nature of the future and by explicitly addressing issues of uncertainty. Our case of Future Forests reveals how environmental research is seriously harmed by the ways in which conflicting images of the future are mediated by a research process that seeks to make stakeholders and researchers of different orientation “walk together” toward shared expectations. In Future Forests, the ambition to address the plural space of the future collided with a willingness, on behalf of forceful actors in the program, to achieve consensus on highly selective images of the future, in what can only be described as a narrowing discursive future space. While Future Forests is a particular case, we use this case in order to show how environmental research can contribute to the active production of

ignorance and nonaction for the long term (Rayner 2012; Davies and McGoey 2012). By following the gradual reconstructions of the program from its start to its second and significantly narrower phase, we can show how a dominant image of the future of forests as organized around increased exploitation and carbon capture actually steered the production of knowledge in the program. The final section of this paper argues not only that Future Forests was a future study gone wrong but also that the ideal of coproduction can have a damaging effect on societal capacities to imagine futures and the capacity of the research process to bring forward potentially uncomfortable forms of knowledge. Today, the coproduction mode of research is the main approach to social and environmental studies in the European Union (in the European Framework programs as well as in national research agencies). While we do not presume that our study of Future Forests is representative of all strategic environmental research, we think that this example allows us to reveal a number of problems raised by the coproduction mode that have general relevance for environmental and future-oriented studies. In coproduced environmental research, “uncomfortable” knowledge, such as knowledge of biodiversity loss, clearly runs the risk of being marginalized at the expense of other forms of knowledge, such as that of the sustainable and productivist management of forests. By partaking in a process in which some future visions become vested with social legitimacy and emerge as dominant while others appear peripheral, environmental research can conceal clashes between different images of future value, thus postponing forms of social conflict into distant time with adverse environmental effects. What are presented as future-oriented or future-relevant forms of study, therefore, do not necessarily help us tackle long-term problems but instead might contribute to making key forms of social knowledge irrelevant for social action.

Negotiating Conflicting Future Value Orders: Coproduction and the Changing Role of Research

Future imaginaries are inherently selective constructions, in which there are key problems pertaining to questions of “Who gets to imagine the future?” (Aradau, Lobo-Guerrero, and Van Munster 2008, 152) and what are the societal consequences of dominant future expectations (Beckert 2013, 2016; Andersson 2016). The coproduction literature has suggested that knowledge, in the so-called mode 2 or knowledge society settings, is coproduced among a wide range of stakeholders or assemblages of lay expertise, stakeholder networks, and civic epistemologies (Nowotny, Scott, and

Gibbons 2001; Jasanoff 2005; Jasanoff and Kim 2015). There are several strands in this body of work. For instance, the governance literature on coproduction and comanagement has argued that involving stakeholders and increasing participation can solve “wicked” issues of high uncertainty and contestation and help improve the policy agenda on mitigation and the management of natural resources (Berkes 2009). The concept of coproduction is also found in Sheila Jasanoff’s work, which proposes that coproduction is essential for the creation of future imaginaries and for forming certain paths of development that steer the anticipations and expectations of societal actors. Knowledge coproduction can be understood as a governance process, in which the research process itself fulfills certain policy objectives and in which research is expected to provide legitimacy for certain, but not all, goals and visions (Berkes 2009). A core argument in the coproduction literature is that future imaginaries and forms of consensus among a plurality of stakeholders help guide forms of social action in areas of technological change or climate action. We think that coproduction can also be an impediment to social action through the silencing of relevant forms of knowledge and through the production of particular forms of non-knowledge.

Ignorance studies have argued that all forms of knowledge production are selective processes in which some forms of fact and relevance are retained, while others are not. As argued by Rayner (2012), institutional systems contain strong desires to actively exclude certain forms of knowledge from the agenda, because these might undermine institutional rationalities, overarching paradigms or images, or central policy objectives. This is particularly problematic in the area of environmental research. A wide range of authors have suggested that within an eco-modernist paradigm, environmental critique tends to be subsumed by competition among policies and take on certain policy roles. As forms of knowledge production become part of the coproduction of policy and policy objectives, it is relevant to ask what the effects are to the critical nature of environmental research. *Future Forests* is, we argue, an example of a highly problematic way in which environmental research became part of the settling of conflict between future objectives such as ecosystem protection and economic competitiveness (Baker 2007, 301; Beland Lindahl and Westholm 2012; Hajer 1995). An explicit objective of the “relevance” agenda in research is precisely the management of conflict arising from the fact that different stakeholders have different conceptions of future value (Andersson 2016). In many futures-oriented studies, it is this existence of colliding future images, expectations, and notions of value that creates uncertainty. Managing

uncertainty thus requires managing value contestation, including within the research process itself.

According to some critics, environmental research contributes to a post-political sustainability agenda (Swyngedouw 2010; Simon and Randalls 2016), a core element of which is the rejection of conflict and the indefinite postponing of solutions to climate change. As environmental research becomes drawn into direct forms of collaboration with industrial stakeholders and a new policy agenda, its purpose changes from contributing a plurality of forms of knowledge on environmental concerns to promoting a dominant image of the future. In the case of Future Forest, this image can be directly linked to the presence of powerful stakeholders within the program, the Swedish forest industry. While they did not directly interfere with program results, they were able to establish a specific image of the future of forests as a shared expectation within the program and organize forms of consensus around it. Coproduction is in this context a dangerously asymmetrical process, and we propose that coproduction scholars need to pay very careful attention to the distribution of power and influence among stakeholders in the research process. Our study of the distribution of influence among actors over the life cycle of a research program is important here, as is the claim that consensus can be understood as a form of active construction of nonknowledge that does not help alleviate uncertainty but contributes to it. We show a complex process in which many of the ordinary workings of a large research program—the formulation of a call, the peer review, the setup of research, and the communication of results—contribute to a process of “capturing” the future. In this process, research obtains a new objective, which can be described as the negotiation of conflicting future value orders so that forms of societal consensus can be created. Consensus, in this paper, is thus taken as a product of a process that is inherently conflictual and that does not stop conflict from existing but postpones its possible solutions by obfuscating conflictual elements rather than bringing them into clear light. The creation of consensus requires power, in our case, exercised through a series of stepwise “closings” of the initially open range of interrogations of the research program. While there can be many productive reasons for consensus in a social setting, we propose that consensus can also be used as a strategic resource to reduce the plurality of available future images in a society. Rayner points to four strategic modes of eliminating uncomfortable knowledge and hence achieving “comfortable knowledge”: denial, dismissal, displacement, and diversion. In our case, the emphasis on consensus—an emphasis on getting stakeholders to gather around key results even though other results could have emphasized

divergences in views—functioned as an alternative to these modes. As such, it produced effects without powerful actors having to resort to the actual manufacturing of doubt. In Oreskes and Conway's (2010) study of tobacco, industrial interests use research as part of an active production of doubt, in other words, misleading information (see also Michaels 2008). In another study, financial actors benefit from the unreliability of predictive models to produce forms of nonknowledge and avoid responsibility about future matters (Davies and McGoey 2012). In our study, critical environmental research from the social sciences was integrated with industrially motivated research by appeal to the argument that research could be used as a process of weighing different images of the future together so that one dominant image could be identified. Managing conflict and arriving at a shared image was thus an explicit purpose of the research process.

This holds implications not only for coproduction studies but also for the literature in futures studies. The literature on scenarios tends to describe these as democratic tools of “opening” the future by creating spaces for a dialogue on future issues and therefore as central to the management of long-term issues that are strongly tainted by uncertainty and divergences of expectation. Critical studies have shown that this dialogue, when it involves core issues on land use or the exploitation of oil or timber, for instance, can be dangerously asymmetrical as citizen groups or nongovernmental organizations (NGOs) are put on a par with core industrial or policy interests (Patel, Kok, and Rothman 2007). The epistemological tools and technologies designed to deal with the future might not, in particular scenario processes, always open the future by facilitating social dialogue; rather, they can be equally expected to “close” possible horizons of change (Rickards et al. 2014). These tools might thus be questionable agents of collective problem-solving. Arguably, it matters if such epistemological tools are used to highlight divergences in images—at which point forms of future conflict could be exposed to scrutiny—or if they are rather used to identify potential forms of friction among stakeholders so that certain social groups or NGOs can be isolated. In our case, the future image with which the program ended was exactly the image that had motivated strong actors to create the program in the first place; and in the life of the program, many other images of the future disappeared. Consensus is one thing if it is a product of a legitimate process of actively finding points of divergence and convergence in social conflicts, and another if it is an imposed movement toward a predetermined dominant idea. It is in this latter sense that we use the term consensus in the paper. As a necessarily selective social construct, consensus requires resources that include forms

of symbolic violence, and, as a goal of the research process, consensus produces many results other than knowledge.

Method

We set out to understand how the research process can become entangled with the production of dominant images of the future and promote them rather than others. The method therefore consists of an ethnographic study of the life of a research program. In the coming pages, we present how it was possible for a specific future vision to emerge from a set of actors in the Swedish forest industry and gradually become entrenched as a dominant research objective in a large platform of a public environmental research agency (Mistra). Our method focuses on identifying a series of gradual closures in the research program. These closures occurred at key moments: they included the program formulation and the call for research, the choice of participants and the creation of a program board, the decision to move from a wider set of scenarios and stakeholders to only a few, and the selective communication of results. We identified these moments through the ethnographic study of the research platform and through a three-step inquiry. The first part of the inquiry was participatory. Westholm was involved in the final planning of the Future Forest (FF) program in 2008 and served as a component project manager during the program 2009-2012. He thus had privileged access to planning and implementation of meetings, the program's Synthesis center and the communication officer, meetings with the stakeholder panel and the researchers in the program, and as e-mail traffic and oral communications. These participatory observations in the program formed the basis for a second step in which ethnographic notes were complemented with the detailed study of the full-text corpus of sources pertaining to Future Forest, drawing on 1,100 pages from Mistra archives and internal written communications in the FF-program bulletins, e-mails, and so on. We had little access to communications between the directors and members of the board. The corpus was analyzed with two aims: to deconstruct through discourse analysis the meaning of notions such as relevance underlying Mistra's research and to identify major lines of conflict in the preparation of the program. In a third step, these findings were used to identify informants and conduct interviews in order to analyze colliding future images and forms of influence within the program. We carried out fifteen semistructured interviews with FF board members; forestry industry representatives; former and current Future Forests program directors, personnel, and researchers; the chair of Mistra; and former and

current Mistra executive directors. Interviews lasted 1–2.5 hours and were recorded and transcribed.

Interviewees were informed that they might be cited and could be referred to without anonymity. We were less able to conduct interviews with researchers in the program and stakeholders.

In order to avoid possible bias, we triangulated Westholm's participatory observations with interviews and program documents. The interviews were conducted by Andersson, Westholm, and a research assistant (information on the informants is provided in the Appendix).

Mistra and Future Forests: "Social Relevance"

Mistra was established in 1994, inspired by changes in research policy in leading economies such as those of Germany, the US, and Japan. It was part of a new research strategy that began in Sweden in the 1990s and that emphasized growth, innovation, and sustainability (L. Lundqvist 2000, 23; T. Lundqvist and Carlsson 2004, 131). This research strategy gave a fundamentally new role to environmental research, which was emphasized as being socially relevant, as contributing to cooperation and social dialogue between actors, and as including industry, which had so far been excluded from the formulation of environmental research objectives (Governmental Committee Directive 1993, 90; Government Bill (proposition) 2009/10:149, Government Bill 1992/93:170, 1992/93:171). "There are three beneficiaries—the world of research, the world of politics, and the private sector—always these three," the Mistra chair explained in our interview (interview 13 in the Appendix). The specific purpose of Mistra was to find ways of reconciling environmental objectives and competition politics. It did this by structuring research in large and interdisciplinary research programs in which different stakeholders were intended to participate and in which the social sciences were also expected to contribute to what had previously only been areas of the natural sciences (Mobjörk 2004, 194; see also Benner 2001; Sweco Eurofutures AB 2013, 40).

Figure 1 shows an illustration taken from Mistra's jubilee publication in 2014. It shows that the ideal of relevance came with highly specific conceptions of the research process and the contribution of the social sciences to an agenda of competitive collaboration with the natural sciences, policy, and industry. This new research process included a new type of researcher, oriented toward "cooperation" and "user involvement" (Mistra 2014, 72).¹ The same publication displays a statement by the executive director of the European Environment Agency: "it is essential to foster future



Figure 1. “Researchers on a leash—the Mistra way”. Source: Mistra (2014, 71).

environmental researchers and giving incentives to research that earnestly contributes to the sustainable development of society”; Mistra (2014) is showcased as a role model for European research (p. 63).

In the 2000s, Mistra created several research programs explicitly oriented to the future and named *Urban Futures*, *Future Forests*, *Arctic Futures*, and *Future Fashion*. These were all understood as strategic research programs of particular societal relevance. They were labeled “future” because they were intended to employ methods of futures studies, such as scenarios, as a way of dealing with the openness and uncertainty surrounding the future and as a way of demonstrating awareness of conflicting future images. Future Forests (“Future Forests —Sustainable Strategies under Uncertainty and Risk”) was one of these research platforms, bringing together actors from academia, the public sector, and the forest industry (see <http://www.futureforests.se>). As such, Future Forests was a

flagship program intended by Mistra to set the agenda for forest research in Sweden and change patterns of knowledge production by emphasizing new forms of collaboration between industrial and academic partners and by making environmental research a direct contributor to the national growth agenda.

In June 2007, Mistra announced the call for research applications to the program (p. 5). The program would operate with a 50- to 100-year time frame, considering the long-term challenges and multiple future demands between biodiversity and exploitation that are facing Swedish forests. The program was to introduce new and “dynamic” strategies for forest management “in socioeconomic as well as natural systems” (Mistra 2007, 5). A central contribution, therefore, was the implication of social science, mobilized to address value clashes and social forms of uncertainty. The call specifically referred to the need for cooperation among stakeholders with different interests. Subprojects were to deal with a range of future challenges, including industrial considerations, global markets, and climate change; values and conflicts over future forest use and land; and “nonwood demands” (i.e., cultural and leisure aspects). These various challenges, the call suggested, should be addressed in scenarios that took into account the existence of a range of different future visions and helped promote strategies capable of dealing with the uncertainty produced by these different expectations. Only one applicant responded to the call. The Forest Faculty of the Swedish University of Agricultural Sciences (SLU), Umeå University, and the Forestry Research Institute of Sweden jointly submitted a seventy-one-page proposal for an eight-year SEK 200 million (roughly €20 million) research program (SLU and Umeå University 2008).

Future Forests can be clearly placed within a changing public and policy environment of forestry research in Sweden. Forests are expected to meet a number of future expectations ranging from the production of paper, pulp, wood products, and lumber to biodiversity preservation, leisure, and carbon capture. As multiple stakeholders—the general public, industrial actors, small forest owners, and the environmental movement—have an interest in forests, forests are sites where potentially very different notions of future value and use play out (Hecht 2015). The long turnover cycles in boreal forestry (Wirén 1985) pose a key problem of temporal rationality and long-term management. Climate change introduces uncertainties into forest management with respect to possible invasive species, drought, flooding, fire, competition between changing land uses, and changing regional distribution of forest growth (Westholm 2015). In other words, forest futures are uncertain because of concrete challenges and expectations. From the

interviews conducted with program members, a specific set of rationales came to the forefront as part of the definition of relevance and “uncertainty.” These explicitly had to do with social contestation, the environmental movement, and the social legitimacy of production concerns. Forestry has been a dominant Swedish industry since the late nineteenth century. In the postwar period, forestry was associated with strong notions of productivism (Mårald and Westholm 2016). Forest policy therefore supported intensive forestry in even-aged monocultures. This approach to forestry was strongly supported by education, research, and research-based advisory services, mainly at the SLU, which became the key provider of knowledge input into both industrial and public forest management (Westholm 2014). As a “sector university,” SLU has historically entrenched links with the forest industry. A long history of unquestioned consensus around forest exploitation changed with the rise of environmentalist criticism in Sweden in the 1970s. For environmentalists, the monocultures and clear-felling that had dominated the Swedish forest industry were a threat to biodiversity (Bush 2010; Lisberg Jensen 2002). These controversies introduced a new element into forest management, which from then on had to deal with the problem of divergent values around future forest use.

A study at the Swedish Institute for Future Studies in 1985 proposed that productivist interests had to be balanced against social needs, introducing multiple uses of forests as a possible vision for the future. The study criticized the dominance of the forest industry in creating images of the future forest (Wirén 1985, 223). By the 1990s, there were protests in Sweden against logging in mountain areas and old-growth forests and threats of an international boycott of Swedish forest products. These tactics reinforced the conflict between the biodiversity values promoted by the green movement and the production interests defended by the forest industry (Mårald and Westholm 2016). In 1993, the creation of a new Forestry Act (Skogsvårdslag 1993, 553) attempted to resolve this conflict by formally giving equal weight to environmental objectives. The Act also introduced the liberalization of forest management, emphasizing the private property rights that private landowners and forest companies used to increase their authority over the trade-offs between productivist aims and environmental concerns. This Swedish “forestry model” has been celebrated as a roadmap for sustainable forest management (for instance, by the Swedish Government, Regeringsbeslut 2012/919, in the film “Sustainable Forestry”—The Swedish Model at the Rio Conference 2012); but it has also been subjected to growing criticism as it has failed to preserve biodiversity as required by the national environmental quality objectives (see: <http://www.Miljömål.se>).

The Forestry Act meanwhile created a level of resentment in the forest industry, which felt that production concerns and environmental values were put on the same level in the Act, with detrimental economic and societal effects (interview 15 in the Appendix). Our interviews revealed that these forest management tensions were a main driver of the creation of the Future Forests program, which had as its objective to investigate divergent future images and expectations on the Swedish forest.

The Formation of the Research Platform

The Rio Conference in 1992 put biodiversity on the global policy agenda. According to our interviewees, from the 1990s onward, forest industry representatives increasingly felt that they were being defined as a lobby and that they were in the process of losing a grip on the public debate on forests: “Biologists demanded equal concern for production and environmental interests Whatever we did—it was wrong” (interview 15 in the Appendix). “In the industry, we have just woken up to realize that we are swimming in society. We have always been concerned with mastering the world around us, how the forests should be managed, but we never realized that people had to find our solutions reasonable” (interview 3 in the Appendix).

In this context, the forestry industry saw new and tighter relationships with independent university research as a possible means to influence national forest policy and gain social legitimacy (interviews 3, 12, and 15 in the Appendix). Historically, the forest industry had strong links to state politics (Beland Lindahl and Westholm 2012). Feeling that they had lost this channel of influence, the industry now recognized the universities as constituting an effective political voice: “The political sphere listens more to messages from a 15-year-old bird watcher than from me as head of forest management of SCA” (interview 15 in the Appendix). As one interviewee put it, the initiative to establish a grand research program was intended to help the industry “shape the debate” on forest issues (interview 1 in the Appendix).

The open call for competitive bids for research proposals, published in 2008, had been preceded by extensive communication between Mistra, the forest industry, and a number of forest researchers with long-standing and documented relationships with the forest industry (interviews 1, 5, 6, and 9 in the Appendix). Interviewees of the interviews 1, 5, 12, and 15 given in the Appendix described the run-up to the research program as a long process involving many different social actors. However, the interviews also

revealed that the forest industries had a privileged position among these actors. Starting in 2005, the industry had organized a series of meetings and conferences with the universities (interviews 1, 5, 6, and 12 in the Appendix) in a process that culminated in 2006 with an invitation from Mistra to discuss a future research program for forests. The board chair of Mistra described this as a normal process: “Anyone can come by and court us” (interview 14 in the Appendix). In two interviews, Mistra directors proposed that it was normal procedure for the cofounders of large-scale research platforms, such as industry, to have a stake not only in funding but also in formulating the research call (interviews 5 and 15 in the Appendix). With such large research programs, only a few social actors are de facto able to participate and this includes large industrial actors (as we have seen this is exactly Mistra’s idea of relevance).

The creation of Future Forests therefore involved Mistra in a negotiation process that reproduced existing links between the forest industry and a form of productivist university research closely related to forestry, particularly at SLU. From the forest industry came a clear dominant future image, and interviews and written documents show that forest actors wanted a research program that would support increased production (for instance, interview 5 in the Appendix). Mistra’s intentions, as a public research agency, were broader: Mistra wanted an interdisciplinary program that would be capable of leading forest research toward broader issues of sustainability by involving the social sciences and targeting difficult issues of land use and value conflicts (interviews 1 and 6 in the Appendix). For this reason, Mistra insisted on the use of methods that would reveal different future scenarios.

These existing differences in expectations between the forest industry, expected to contribute central funds to the program, and the public agency Mistra were further complicated by the fact that the Future Forests proposal was rejected by an international peer review panel (Nilsson et al. 2008; Rosenberg and Lunnen 2008). Five scientific evaluators agreed that the one submitted project was not good enough. They were particularly critical of its productivist bias, the limited attention to stakeholder positions, and the limited use of social sciences in the program—in other words, precisely on the points where Mistra wanted to see a core contribution. This negative evaluation posed a substantial problem because Mistra abides by rules of academic excellence, but the forest industry had already committed to substantial cofinancing (interview 5 in the Appendix). The forest industry representative on the board argued that the huge amount of money from the industry made it practically impossible for Mistra not to

accept the project despite the negative scientific peer review (interview 6 in the Appendix). The preevaluation was not the last critical review of Future Forests, as the midterm evaluation would repeat the same points of criticism. The program was saved on both occasions by negotiations between the Mistra board and the intended program board of Future Forests, which had a forest industry majority (interview 6 in the Appendix). In the first instance, the board decided to override the scientific evaluation (interview 6 in the Appendix). “We talked ourselves out of the utterly critical evaluations” (interview 3 in the Appendix). For the 2009-2012 period, Future Forests received SEK 143.2 million in funding, of which Mistra contributed SEK 60 million while the universities and the private sector shared the remainder (Mistra 2008, 2009).

“More of Everything”

Behind the initial project plan stood Sweden’s major forest companies (LRF, SCA, Holmen, Bergvik, Skogssällskapet, and Sveaskog). These had also agreed to contribute funding for a large research platform. Examining the motivations of the industry, it is manifest that these actors had clear ideas of specific objectives that the Future Forest program should fulfill. Forest companies wanted to build social acceptance for more intensive forest production in Sweden and saw that carbon politics, emerging on the political agenda, could be used as a new motivation for increased forest production (interview 15 in the Appendix).

The initial program plan used the slogan more of everything. More of everything was a win-win idea, which meant that all the different forest interests were reconcilable and that no intrinsic value conflict existed between different ideas of future use. Similar win-win notions have recently become dominant in Swedish industrial relations, where it is argued that rationalization is a “win-win” labor capital interest. More timber, more paper, and more bioenergy production could go together with more biodiversity, more recreation, more water resources, and more climate change mitigation (SLU and Umeå University 2009, 8). Not everyone believed that such a win-win situation was possible, but the win-win slogan was at first efficient as a way of holding different agendas together. For some researchers and forest directors involved in creating the call, the program was seen as a serious attempt to search for ways to increase biodiversity in managed forests as well (interview 3 in the Appendix); for others, it was mainly an exercise in image enhancement (interview 12 in the Appendix). The slogan more of everything quickly disappeared, turned down both by the scientific

evaluation and by the critique by researchers in the program as these first met. Yet, a central win-win element survived into the actual shaping of the program: The forest industry had identified a drive for climate change mitigation and the specific idea of carbon capture as strategic for demands for increased forest production (interviews 12 and 15 in the Appendix). In the following years, this would become a dominant image for activities and in particular activities influenced by the board. The win-win narrative also influenced directly the first use of scenarios in the program. Future Forests was expected to provide not only arguments for a domestic debate on forest policy but also a policy-relevant argument for ongoing international adaptation debates, namely, that Sweden, with its massive forest growth, was already assuming far-reaching carbon responsibilities through forest production. This line of argument has been criticized by the Swedish Environmental Protection Agency (Naturvårdsverket) as a strategy to avoid CO₂ reduction measures (see Holmgren 2015; Kleinschmit and Sjöstedt 2014; McAfee 2016).

The importance of the idea of carbon sequestration to the forest companies is demonstrated by the fact that even before the first meeting with the Future Forests researchers, the board set aside funding for a thematic group on carbon capture as a way of exploring the possible climatic gains from intensified forest production (*Skogen i klimatnyttans tjänst*). The study concluded that climate change itself would increase forest production in Sweden and that an increase of 4°C would have substantial *positive* effects on forest growth (Poudel et al. 2012). During the first Future Forests Week, possible net export revenue of SEK 5 billion was forecast if forest policy supported such intensification. As a later section shows, conclusions of this kind were at the heart of the results disseminated by the Future Forests program.

A central conflict concerned the role of social science in the program (interview 4 in the Appendix). The SCA director worded this conflict clearly: “How much of this planned program is research on forest growth and how much is communist research?” (interview 15 in the Appendix). Others thought that social science might be of strategic use: “We saw the usefulness of a research program, both for its content and its political potential. We in the forest industry put the plant successfully in the ground, but we have no tradition of managing political ideas in broader society—we are useless at it” (interview 3 in the Appendix).

The inclusion of social science was a Mistra request for the establishment of the platform (interview 6 in the Appendix). But as the forest industry gained control over the program’s board, they could use this

position in order to influence the orientation of the program, and particularly prioritized activities. “It was extremely important who was to have a place” (interview 4 in the Appendix). In fact, some of the would-be members of the board had even before its actual composition taken central part in selecting the issues, projects, researchers, budgets, and organization of both the call and the application (interviews 6, 5, and 3 in the Appendix). The board had seven members, four of them from the forest industry and three from forest research. Mistra, providing over a third of the program’s funding, had one board member without a vote. The board had the power to influence strategic decisions about the running of the program (interview 4 in the Appendix). Importantly, the board also had a budget separate from the main program budget, through which it could finance “integration projects” across disciplinary boundaries, as well as thematic working groups to promote research on certain issues of strategic interest (such as the one on carbon capture). The maneuvering room that this structure gave was essential, because it ensured that key interests could be promoted without discussion in the larger group of researchers: “It is a bit of a rooster fight—we pay for the program and we must influence it We don’t buy certain opinions, but we must steer and influence what aspects will be explored” (interview 15 in the Appendix).

From Plural Futures to Selective Consensus

A number of different mechanisms were set up in the program in order to assure a plurality of future visions. The synthesis program, intended to work with scenarios, was one of these. Another was the Center for Forest System Analyses and Synthesis (ForSA). Originally a “forest house” was also planned, in which all researchers would spend time. The house was never built and ForSa itself was in a weak position in the program until it ceased to exist in 2012. One synthesis project, resulting in a publication in *Nature Communications*, concluded that mixed forests with a variation of tree species generate more ecosystem services and, at the same time, higher biomass production than do monocultures with single-tree species (Garnfeldt et al., 2013). This created a conflict with the program board, which represented industry representatives advocating monocultures. It led to the exclusion of one of the authors from the program: “They (the group of researchers) got fundamentally lost . . . and JM had to leave the program because of this” (interview 15 in the Appendix). Another program structure was the Future Forests Week. It was launched as a vital meeting place for the researchers within the program and key to establishing cross-

disciplinary discussions. However, the program directors arranged this event only twice before dropping the idea of holding general researchers' meetings.

Yet another structure was the stakeholder panel consisting of representatives of forest companies, local authorities, outdoor tourism interests, and environmental NGOs. It was regarded as crucial in the program preevaluation, because its aim was to give voice to conflicting views and allow representation of civil society, including the environmental movement. The board seems not to have intended the stakeholder panel to be influential: "Most things were already settled and the board decided on directions, research projects, etc. There was never any intention to have an influential stakeholder panel" (interview 1 in the Appendix). "We thought the stakeholder panel could be an interface with society, but we failed to communicate its roles and responsibilities. It was a misunderstanding: they thought they should take part in strategic decisions" (interview 9 in the Appendix). The panel convened a couple of times during the first two years and was then terminated by the program directors since they believed it did not function. Several stakeholders had by then stopped attending meetings or formally withdrawn, as did both World Wide fund for Nature (WWF) and the Svenska naturskyddsföreningen (SNF). Some informants felt that the end of the stakeholder panel was a major disappointment because it ran counter to the aim of the program, which was to establish a broader consensus on forest management. "The stakeholder panel lost its function, which was to build a consensus on forest management—it simply became too homogenous when the environmental NGOs left. This was a pity, because the forest industry always ends up in too small a group of forest actors" (interview 4 in the Appendix). Other forest representatives thought it was necessary to get rid of troublesome voices: "SNF is based on conflict—they are very good at it, they survive on being good at it, that is how they recruit new members. Therefore it was not a good idea to bring them into a consensus process" (interview 15 in the Appendix).

Finally, a fate similar to that of ForSa and the stakeholder panel befell the scenario process itself. Scenarios were described in the proposal as the backbone of an interdisciplinary process, drawing on the research and involving the stakeholders in discussions of forest futures (SLU and Umeå University 2009, 9). The use of the scenario method was directly addressed in the proposal as a way of dealing with conflicting goals, by helping to organize a discussion of conflicting futures and contribute to the handling of such conflicts (Sandström and Öhman 2014, 9, author's translation). Meanwhile, and despite this Mistra emphasis on scenarios, the initial proposal

contained two story lines, “business as usual” and more of everything. This limited vision of the future was criticized in the peer review process and replaced with the help of a consultant in scenario crafting. But the scenarios were produced in a process separated from the research process and never actually integrated in the program research. They were never used to address the possibility of conflicting future visions or to perform the expected “synthesis” of different images.

The result of the failures of these structures and initiatives was quite simply that the working forms that were meant to expose contradictory perspectives and conflicting future visions were excluded from the main of program activities. None of the central elements put in place to make Future Forests an open platform for discussing forest futures survived more than two years. The result of this was that the program after two years was increasingly oriented toward a reiterated prioritization of the particular future vision of the win-win narrative of increased forest production and carbon capture.

The (Ir)relevance of Results: Science as Public Communication

A final step in the process of gradually narrowing down the scope of the “future” in the program was the strategy for diffusing research results. The literature cited in the Introduction section gives examples of research being used as propaganda or misinformation, and some studies also show how research can be used selectively to displace or silence problematic forms of knowledge (Rayner 2012). In the case of Future Forests, scientific results as such do not seem to have been the main consideration of program activities; this stands in contrast to the importance that results had to the researchers themselves and to the fact that results were both rich and plentiful. Two board members representing the forest industry said that they had not informed themselves of the program’s results: “I should have read more—I haven’t assimilated the results” (interview 3 in the Appendix), “I haven’t been able to read ninety per cent” (interview 15 in the Appendix), and “I haven’t read any articles, only summaries” (interview 4). In the same interviews, the policy-oriented goal and collaboration among stakeholders *is* what is mentioned as important. Interviewees conclude that the industry’s interest in Future Forests was about “the process,” “new knowledge,” and “synergy knowledge.” The first program director stated: “The strange thing is that it [i.e., Future Forests] has become a brand, without being meant to” (interview 9 in the Appendix). This brand was seen as an asset, particularly with regard to policy, because

it was a marker of forest researchers and social scientists working together. “What was important was not producing results, but rather inducing different actors to work together and change how forest research was conducted” (interview 9 in the Appendix).

We saw little of divergent views in the board and between the funding companies when the program was up and running. Also, most of the research in the program was carried out without conflicting views exposed between the researchers. This was particularly so after the first years in the program, during which the particular mechanisms that were built to foster exchange between divergent views were shut down. The output of the program for the full program period was impressive, as Future Forests claims a record of 350 scientific articles. Most of this was natural science and fairly technical in nature. But the research process and the communication strategy lived separate lives. The lack of communication between researchers within the program is striking, as is the way that the vast majority of research within the program functioned as a legitimation for the much more selective and chosen key conclusions that were communicated, in a significant and politicized way, from the program. This is illustrated by the fact that leading members of the program published six articles in 2017 in the lead pages of the main national newspaper (*Svenska Dagbladet*), all articles presenting the climate reasons for intensification of Swedish forest production. Forest growth and carbon benefits are recurrent themes also in Future Forests popular information bulletin (Skog & Framtid 2011; 2012) (Forest & Future).

Through this selective communication of results, Future Forests contributed directly to a Swedish policy agenda on global forests and carbon emissions. In 2012, the Minister for Rural Affairs issued a directive to the SLU to present Swedish forestry in a positive light at the United Nations’ “Rio+20” conference. This meant showcasing Sweden’s “effective forest production in combination with high environmental ambitions” (Regeringsbeslut 2012/919). “The Swedish Management model” was to be marketed in seminars and exhibitions. Future Forests’ directors produced a film that showcased a model of Swedish forest management in which all forest values—from biodiversity to production—were catered to. A ministerial directive with a political demand targeting a research program is exceptional in a Swedish context and caused researchers to protest (*Svenska Dagbladet* 2013a). Surprisingly, the vice chancellor responded that it was SLU (read: the Future Forests program) that had asked the ministry for this initiative (*Svenska Dagbladet* 2013b).

Concluding Remarks: The Consensus Machine

Future Forests is in many ways perhaps an extreme case. We can clearly show that industrial actors managed to change the orientation of the program from the representation of plural forest futures to a much narrower image of increased production and that they strategically used the research platform in order to diffuse images of increased production and the win-win message. Yet the case of Future Forests illustrates something more than the capture of research by industrial interests. The main purpose of the program was not to investigate long-term challenges and possible social responses to them. Rather, its purpose was to serve as a space in which to manage a key societal conflict—namely, between biodiversity and industrial productivity—by turning the research process into a tool of mediation between actors with different agendas. The asymmetry between the stakeholders—and not least the relative marginalization of some researchers in the communication of results—turned the program into what can be described as a source of legitimation for a dominant interest and future image. With Mouffe (2005), we suggest that coproduction envisages politics not as a choice between alternatives but as a matter of finding compromises and forms of mediation between competing images of the future and conflicting ideas of future value. As research becomes a question of mediating images in a game where some stakeholders have less power and others have more, it begins to produce more than knowledge. We argue that research drawn into these processes loses not only its critical role and capacity but also its essential function to produce alternative understandings and images of the future and that this contributes to what Swyngedouw (2011, 2013) has referred to as “Apocalypse forever” in order to denote the seeming inability to produce genuine forms of social action to tackle climate change.

We believe that the life-of-a-research-program study that we have presented raises a number of significant warnings about forms of strategic collaboration in research. First of all, the idea that relevance can be deduced from a process of collaboration with different stakeholders including industry and policy and then put to the research process as a specific goal for the production of knowledge is a far from harmless idea. It leads, in fact, to a total reformulation of the goals of the research process as conventionally understood. Relevance does not emphasize the production of original results or new knowledge, but, rather, forms of consensus and shared image, even when this shared image may reflect significant forms of social bias such as, for instance, a major industrial interest. Second, our study has shown both that coproduction is not a symmetrical process and that placing

academic research on a par with other dominant interests will lead to the marginalization of uncomfortable, critical results, or results that do not coincide with the agenda. Consensus in Future Forests was an artificial construct produced by the asymmetry between interests and actors in the program, and it arose from the idea that they needed to produce knowledge together (see Oreskes and Conway 2010; Michaels 2008). Third, if academic research is but an “input” to a production of societal images, then it would also appear logical that the images that it produces hold no particular value as opposed, for instance, to Public Relations (PR) images in a communication strategy. Indeed, the similarity between the communication strategy of Future Forests—with its emphasis on glossy magazines and film—and a lobbyist firm is striking. Industrial interests today understand public research as part of a communication strategy. They thus make strategic use of publicly funded research in order to steer the dialogue with society and settle to them problematic expectations or anticipations on the future. This is deeply problematic, even if it does not lead to a direct tampering with results. The very idea that research should be part of a consensus creating strategy or mediation between conflicts in expectations on the future changes the research agenda per se, and core societal conflicts that should not be hidden but brought into the democratic arena become obscured. If the research process partakes in the production of what appears to essentially be the production of forms of social legitimacy around dominant future visions, then its very purpose to potentially unsettle and deconstruct dominant images erodes. The future itself is not a terrain of shared imaginaries but one of essentially conflicting interests concerning long-term developments. Our article has shown the detrimental effects of the idea that a core purpose of research should be that of negotiating different and oftentimes conflicting future visions.

Appendix

List of Interviews

1. Annika Nordin, program director of Future Forests, phone interview, September 24, 2014.
2. Jon Moen, former head of ForSA, the Future Forests, Synthesis Center, phone interview, September 25, 2014.
3. Erik Normark, forestry manager at Holmen, September 29, 2014.
4. Linda Hedlund, former head of LRF, Skogsägarna, October 17, 2014.
5. Thomas Nilsson, program director of Mistra, September 30, 2014.

6. Lars-Erik Liljelund, former executive director of Mistra, September 30, 2014.
7. Vilhelm Agrell, professor and board member of Future Forests, October 15, 2014.
8. Anders Esselin, former communications manager of Future Forests, October 21, 2014.
9. Thomas Lundmark, former program director of Future Forests, October 22, 2014.
10. Maria Norrfalk, chairman of the board of Future Forests, October 23, 2014.
11. Stig Larsson, professor at SLU and former scientific director of Future Forests, October 24, 2014.
12. Lena Gustafsson, professor and component project director at SLU, November 6, 2014.
13. Lena Treschow-Thorell, chairman of the board of Mistra, November 12, 2014.
14. Åke Iverfeldt, executive director of Mistra, November 12, 2014.
15. Pelle Gemmel, forestry manager at SCA and professor at SLU, October 4, 2014.

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References

- Andersson, J. 2016. "Governing the Future: States and the Management of Expectation." In *Transformations of the State*, edited by P. Legales and D. King, 298-313. Oxford, UK: Oxford University Press.
- Aradau, C., L. Lobo-Guerrero, and R. Van Munster. 2008. "Security, Technologies of Risk and the Political: Guest Editors' Introduction." *Security Dialogue* 39 (2/3): 147-54.
- Baker, S. 2007. "Sustainable Development as Symbolic Commitment: Declaratory Politics and the Seductive Appeal of Ecological Modernisation in the European Union." *Environmental Politics* 16 (2): 297-317.
- Beckert, J. 2013. "Imagined Futures: Fictional Expectations in the Economy." *Theory and Society* 42 (3): 219-40.
- Beckert, J. 2016. *Fictional Expectations and Capitalist Dynamics. Imagined Futures*. Cambridge, MA: Harvard University Press.
- Beland Lindahl, K., and E. Westholm. 2012. "Future Forests: Perceptions and Strategies of Key Actors." *Scandinavian Journal of Forest Research* 27 (2): 154-63.
- Benner, M. 2001. "Kontrovers och konsensus: Vetenskap och politik i svenskt 1990-tal." SISTER Report No. 1, Bokförlaget Nya Doxa, Stockholm, Sweden.
- Berkes, F. 2009. "Evolution of Co-management. Bridging Organisations and Social Learning." *Journal of Environmental Management* 90 (5): 1692-702.
- Bush, T. 2010. "Biodiversity and Sectoral Responsibility in the Development of Swedish Forestry Policy, 1988-1993." *Scandinavian Journal of History* 35 (4): 471-98.
- Davies, W., and L. McGoey. 2012. "Rationalities of Ignorance. Financial Crisis and the Ambivalences of Neoliberal Epistemology." *Economy and Society* 4 (1): 64-83.
- Gamfeldt, L., T. Snäll, R. Bagchi, M. Jonsson, L. Gustafsson, P. Kjellander, and M. C. Ruiz-Jaen, et al. 2013. "Higher Levels of Multiple Ecosystem Services Are Found in Forests with More Tree Species." *Nature Communications* 4: Article number 1340.
- Government Bill (proposition) 1992/93:170. *Forskning för kunskap och framsteg*.
- Government Bill (proposition) 1992/93:171. *Om forskning i frontlinjen*.
- Government Bill (proposition) 2009/10:149. En akademi i tiden—ökad frihet för universitet och högskolor.
- Governmental Committee Directive (kommittédirektiv 1993:90). Organisationskommitté för en stiftelse för miljöstrategisk forskning.
- Hajer, M. A. 1995. *The Politics of Environmental Discourse: Ecological Modernisation and the Policy Process*. Oxford, UK: Oxford University Press.

- Hecht, S. 2015. *The Social Lives of Forests*. Chicago, IL: University of Chicago Press.
- Holmgren, S. 2015. "Governing Forest in a Changing Climate." PhD diss., 2015:61, Acta Uniesitatis Agriculturae Sueciae, Uppsala, Sweden.
- Jasanoff, S. 2005. *Designs on Nature. Science and Democracy in Europe and the United States*. Princeton, NJ: Princeton University Press.
- Jasanoff, S. and S. H. Kim, eds. 2015. *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*. Chicago, IL: University of Chicago Press.
- Kleinschmit, D., and V. Sjöstedt. 2014. "Between Science and Politics: Swedish Newspaper Reporting on Forests in a Changing Climate." *Environmental Science and Policy* 35:117-27.
- Lisberg Jensen, E. 2002. *Som man ropar i skogen: Modernitet, makt och mångfald i kampen om Njakafjäll och i den svenska skogsbruksdebatten 1970–2000*. Lund, Sweden: Lund University.
- Lundqvist, L. 2000. "Capacity-building or Social Construction? Explaining Sweden's Shift towards Ecological Modernization." *Geoforum* 31 (1): 21-32.
- Lundqvist, T., and M. Carlsson. 2004. *Framtidspolitik. Visionen om ett hållbart samhälle i svensk politik*. Stockholm, Sweden: Institute for Futures Studies.
- Mårald, E., and E. Westholm. 2016. "The Construction of the Future in the Swedish Forest Sector, 1850–2010." *Nature and Culture* 11 (1): 1-22.
- McAfee, K. 2016. "Green Economy and Carbon Markets for Conservation and Development: A Critical View." *International Environmental Agreements: Politics, Law and Economics* 16 (3): 333-53.
- Michaels, D. 2008. *Doubt Is Their Product. How Industry's Assault on Science Threatens Your Health*. New York: Oxford University Press.
- Mistra. 2007. "Future Forests—Sustainable Strategies under Uncertainty and Risk. Invitation." Mistra Archives, document dated June 28.
- Mistra. 2008. "Protokoll från sammanträde nr 69 i styrelsen för Stiftelsen för miljöstrategisk forskning." Mistra Archives, document dated June 9.
- Mistra. 2009. "Avtal om medfinansiering och medverkan i forskningsprogrammet Future Forests." Mistra Archives, document dated June 8.
- Mistra. 2014. *Mistra 20 år. 1994-2014*. Stockholm, Sweden: Mistra.
- Mobjörk, M. 2004. *En kluren tid? En studie av idéer och föreställningar om vetenskap och kunskap i Stiftelsen för miljöstrategisk forskning, MISTRA*. Linköping, Sweden: Linköpings Universitet Studies in Arts and Science, no. 299.
- Mouffe, C. 2005. *On the Political*. London, UK: Routledge.
- Nilsson, S., G. Bull, S. Collins, P. Duinker, and L. Hetemäki. 2008. "Future Forests. Assessment by the Scientific Review Panel." Mistra Archives, document dated May 5–7.

- Nowotny, H., P. Scott, and M. Gibbons. 2001. *Re-thinking Science: Knowledge in an Age of Uncertainty*. London, UK: Polity.
- Oreskes, N., and M. Conway. 2010. *Merchants of Doubt. How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. London, UK: Bloomsbury Press.
- Patel, M., K. Kok, and D. S. Rothman. 2007. "Participatory Scenario Construction in Land Use Analysis. An Insight into the Experiences Created by Stakeholder Involvement in the North Mediterranean." *Land Use Policy* 24 (3): 546-61.
- Poudel, B., R. Sathre, J. Bergh, L. Gustavsson, A. Lundström, and R. Hyvönen. 2012. "Potential Effects of Intensive Forestry on Biomass Production and Total Carbon Balance in North-central Sweden." *Environmental Forest Policy* 15 (1): 106-24.
- Rayner, S. 2012. "Uncomfortable Knowledge: The Social Construction of Ignorance in Science and Environmental Policy Discourses." *Economy and Society* 41 (1): 107-25.
- Regeringsbeslut 2012/919. *Uppdrag om aktiviteter vid och i anslutning till FN: s konferens om hållbar utveckling*. Lantbruksdepartementet.
- Rickards, L., R. Ison, H. Funfgeld, and J. Wiseman. 2014. "Opening and Closing the Future. Climate Change, Adaptation and Scenario Planning." *Environment and Planning C* 32:587-602.
- Rosenberg, P., and A. B. Lunnen. 2008. "Future Forests—Sustainable Strategies under Uncertainty and Risk" (en nyttoutvärdering). Mistra Archives, document dated May 12.
- Sandström, C., and K. Öhman. Eds. 2014. "Samverkan och konflikt. Rapport från Future Forests 2009-2012." Future Forests rapportserie 2014:1, Sveriges lantbruksuniversitet, Umeå, Sweden.
- Simon, S., and S. Randalls. 2016. "Geography, Ontological Politics and the Resilient Future." *Dialogues in Human Geography* 6 (1): 3-18.
- Skog & Framtid. 2011. Issues 1 and 2.
- Skog & Framtid. 2012. Issues 1 and 2.
- Skogsvårdslag. 1993. Svensk författningssamling 1979:429, revised 1993: 553.
- SLU (Swedish University of Agricultural Sciences) and Umeå University. 2009. "Future Forests: Sustainable Strategies under Uncertainty and Risk." Proposal submitted jointly by the Swedish University of Agriculture Sciences, Umeå University, and the Forestry Research Institute of Sweden, Mistra Archives, document dated April 1.
- Sustainable Forestry—The Swedish Model. Accessed June 25, 2018. <https://www.youtube.com/watch?v=VCW4kA1jipE>.
- Svenska Dagbladet*. 2013a. "Brännpunkt." *Svenska Dagbladet*, May 29.
- Svenska Dagbladet*. 2013b. "Brännpunkt." *Svenska Dagbladet*, May 31.

- Sweco Eurofutures AB. 2013. "From Source of Knowledge to Solving Environmental Problems?" Evaluation of 33 Mistra research programmes implemented and completed 1996-2011, Synthesis report, Mistra Archives.
- Swyngedouw, E. 2010. "Apocalypse Forever." *Theory, Culture and Society* 27 (2-3): 213-32.
- Swyngedouw, E. 2011. "Depoliticized Environments: The End of Nature, Climate Change and the Post-political Condition." *Royal Institute of Philosophy Supplement* 69:253-74.
- Swyngedouw, E. 2013. "The Non-political Politics of Climate Change." *ACME: An International E-Journal for Critical Geographies* 12 (1): 1-8.
- Westholm, E. 2014. "Globala trender och den svenska skogens framtid." In *Som man ropar i skogen—vägval som berör oss alla*, edited by F. Fokuserar, 209-19. Stockholm, Sweden: Formas.
- Westholm, E. 2015. "Futures Studies in the Field of Natural Resources." In *The Future Use of Nordic Forests—A Global Perspective*, edited by E. Westholm, K. Beland Lindahl, and F. Kraxner, 11-24. Amsterdam, the Netherlands: Springer.
- Wirén, E. 1985. *Allemans skog: slutrapport för projektet: Samhället och skogen*. Stockholm, Sweden: Liber Förlag.

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