

The other side of the boundary: Productive interactions seen from the policy side

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Abstract

The literatures on productive interactions and related frameworks depict impact processes as collaborative efforts to permeate various boundaries between research and societal stakeholders. However, the impact literature is biased towards looking at these processes from the researcher side. This paper analyses policymakers' interactions with researchers and the different forms of boundary work that ensue, which contributes to improved understanding of the stakeholder side of interactions. Our point of the departure is the interactions related to Research and development (R&D) units and their networks in the central administration in Norway. Using in-depth interviews with twenty-two civil servants in the field of welfare policy, we show how the combination of competitive and collaborative modes of boundary work makes interactions productive. Because research is a strategic asset in the policy domain, control over knowledge production and autonomy to decide when to follow the evidence (or not) is a central feature of knowledge work in policy organisations.

Key words: societal impact; productive interactions; boundary work; public policy; R&D units.

1. Introduction

Societal impact of research has been a major theme in science policy studies. The emphasis has changed from economic effects and diffusion of research to complex models that highlight a range of outcomes and mechanisms of transfer and interaction. Current state-of-the-art perspectives and measurement methods see impact as the result of *productive interactions* between researchers and other stakeholders (Spaapen and van Drooge 2011; Penfeld et al. 2013). This implies a shift in attention from the actions and qualities of researchers and research, to the wider practices and characteristics of industry representatives, policymakers, and other stakeholders. Sophisticated evaluation approaches have been developed that in various ways address such interactions (Molas-Gallart and Tang 2011; Joly et al. 2015; Greenhalgh et al. 2016; Muhonen et al. 2019), and it is now widely accepted that societal impact occurs in non-linear processes of mutual engagement between researchers and stakeholders.

Despite the interest in stakeholders, a bias towards looking at the research side of interactions remains. The starting points for many analyses are objects of research, for example, research units (Molas-Gallart and Tang 2011; Miettinen et al. 2015), research projects (Jolibert and Wesselink 2012), or research results (Matt et al. 2017). Societal stakeholders are included, but mostly insofar as they can shed light on the research object and its effects, linkages, and actions. This bias is understandable, as much of the productive interactions literature has been developed to create more robust impact evaluation approaches dealing with challenges like attribution and temporality. Productive interaction evaluations highlight

contributions of research rather than complex or futile discussions of attribution, and understanding strings of interactions can reveal new insights into lengthy impact processes (Spaapen and van Drooge 2011). Still, the bias most likely leads to a gap in our understanding of impact processes because many practices and characteristics of stakeholders are left out of the analysis. The goal of this article is to broaden the understanding of how interactions between researchers and stakeholders become productive by empirically examining impact processes from the side of stakeholders. This also means addressing the *boundary* between stakeholders and researchers.

A main claim underlying the productive interaction approach, which is related to a range of systemic and collaboration/co-production-oriented perspectives that have emerged since the mid-1990s (Funtowicz and Ravetz 1993; Gibbons 1994; Nowotny et al. 2001; Jasanoff 2004), is that the boundaries between science and society need to be downplayed in one way or another for impact to occur. An example is the finding that 'fuzzy stakeholder boundaries' are a characteristic of productive interactions (Molas-Gallart and Tang 2011: 224). This leads us to the term *boundary work*, which was coined by Gieryn (1983, 1999) to analyse researchers' strategies and arrangements to protect the autonomy of science by distinguishing it from other social practices and institutions. Later studies have analysed the multitude of aims involved in boundary work and how practices of boundary work may both support stability and effect change (Lamont and Molnár 2002; Zietsma and Lawrence 2010; Langley et al. 2019). Not least, the concept has travelled into

domains beyond the study of science; boundary work may be carried out by any kind of group for various purposes, and boundaries may take different forms—social, symbolic, material, and temporal (Langley et al. 2019: 705). This suggests that not just researchers, but also those on the other side of the boundary between science and society, engage in boundary work in impact processes. Users of research should accordingly not be seen as passive recipients of knowledge but as strategic actors who become involved in boundary work similarly to researchers in processes of productive interactions.

In this study, we analyse the boundary work of a salient group of stakeholders—civil servants who are involved in the procurement and dissemination of research for policy use in the public administration. We have carried out in-depth interviews with twenty-two high-level civil servants who work in the central public administration within social welfare, which is a field that has been subject to heightened expectations regarding the use of research. For that purpose, organisational initiatives have been taken to improve research use in ministries and agencies, and all interviewees are associated with these initiatives. The civil servants are expected to facilitate research use in policy processes, and they are frequently involved in the procurement and assessment of science in the public policy domain. Hence, they operate at the boundary between science and public policy and may be perceived as ‘gatekeepers of knowledge’ in the public administration (Craft and Howlett 2013). By examining how they operate at the boundary between research and public policy, we accordingly aim to make a twofold contribution to the literature. The first concerns how practices on the user side contribute to productive interactions for the impact of science, and the second concerns how the productive interactions are embedded in particular constellations of boundary work.

A key finding is that civil servants engage alternately in competitive and collaborative forms of boundary work (cf. Langley et al. 2019) aimed at defending and creating, as well as negotiating and downplaying, the boundary between science and the domain of public policy. However, different modes of boundary work are observed in various interactions that occur in regular sequences; working *for* the boundary between research and policy in one situation may facilitate collaboration and productive interactions in subsequent situations. Hence, boundary work that may at first glance appear as unproductive may be a precursor to later productive interactions. We therefore suggest that to better understand the conditions for productive interactions and impact, broader sequences of interactions between researchers and stakeholders should be included in analyses.

In the next section, we outline our conceptual starting point in more detail, before we present our empirical setting, methods, and data. We proceed with an inductive analysis, focusing on the practices and perspectives of our interviewees before we go back to the literature on productive interactions and boundary work in the final analysis.

2. Theory: linking productive interactions and boundary work

The linearity embedded in the concept of societal impact—you start with a piece of research, you end up with some kind of societal effect—is problematic. Increasing recognition

of the complexity of the processes underpinning impact has stimulated a race to identify practices and conditions that contribute substantially to impact.

2.1 Dimensions of productive interaction

‘Productive interactions’ has become an influential framework in discussions of the societal impact of research. It has shifted the attention from simple output indicators to the critical role of dynamic interactions for the long-term societal contributions of research. Founded on the basic assumption that ‘in order to have impact you’ve got to have contact’ (Spaapen and van Drooge 2011: 213), three predictors of societal impact are proposed: direct (personal) interactions between researchers and stakeholders, indirect interactions through texts or artefacts, and financial interactions. Empirical studies have explored the variety and complexity of processes of productive interactions (Molas-Gallart and Tang 2011; de Jong et al. 2014; Muhonen et al. 2019) as well as the significance of practices of relational engagement and co-production to the creation of societal benefits (e.g. Ozanne et al. 2017). Establishment of interaction networks among researchers and stakeholders (de Jong et al. 2014) and collaborative knowledge generation (Greenhalgh et al. 2016) are found to promote impact, and purposeful stakeholder engagement can facilitate co-production of knowledge (Jolibert and Wesselink 2012).

Users are therefore critical for productive interactions to occur and for subsequent changes to be recognised as impact, which suggests that more attention is needed to a user side perspective on the conditions for productive interactions. There is nevertheless a bias in much of the literature towards evaluating and researching impact from the side of the researchers. Miettinen et al. (2015: 262), for example, argue that ‘a proper unit of analysis for understanding science’s impact on society is an academic research group and its program’. We would argue that the opposite point is equally relevant—a proper unit of analysis may be a group of users involved in one or more forms of interaction with researchers. In public policy-making, it has been shown that research has little direct policy influence but is dependent on the political, institutional, and cognitive context of its application (Cairney 2016). A relevant user group for understanding the impact of research in public policy could therefore be civil servants employed to facilitate the uptake of research in the public administration within a specific policy field and who regularly meet with researchers.

However, when looking at impact from the stakeholder side, it may be necessary to use other dimensions to classify the interaction. Departing from the distinction between direct, indirect, and financial productive interactions, Miettinen et al. (2015) argue that it can be more fruitful to look at three dimensions of the process. The first one concerns epistemological aspects such as the selection and formulation of problems in research and the extent to which this is informed by societal and stakeholder perspectives. Artefacts comprise the second dimension: these can be technologies and material objects, tools, and texts, which can form ‘bridges’ between science and society, thereby acting as ‘boundary objects’ that facilitate communication and bring different actors together (Bowker and Star 1999). Finally, the third dimension is about organisational and institutional characteristics such as the organisational form of the interaction. Applied on civil servants in the public administration, we may expect that they also

define problems, knowledge needs, and longer-term plans, they engage with various artefacts or boundary objects and may even create some of them, and they can provide an alternative lens into organisational–institutional characteristics of interactions.

2.2 Competitive and collaborative boundary work at the science–policy interface

Also when looking at productive interactions from the stakeholder side, a central question is how the boundary between science and policy is maintained or transcended. Following Thomas Gieryn (1983, 1999), researchers engage in boundary work to distinguish between scientific practices and other social practices when borders between science and society are blurred. Gieryn argues that researchers construct, negotiate, and defend the boundary between science and policy to protect professional autonomy and thereby promote a view of science as credible and as a principal source of cognitive authority in society. This authority can be exchanged into other resources, including financial resources and political influence. Hence, researchers have a self-interest in promoting a separation of science and policy, and they need to constantly engage in boundary work to maintain their own status and autonomy (Sundqvist et al. 2018). Examples include discourses about a particular core of science as essential to its integrity and credibility—such as proper use of methods and adequate technical evidence and arguments (Duncan et al. 2020)—and the formalisation of methodological procedures (Sundqvist et al. 2015). Such boundary work may also manifest itself in institutional measures to control science–policy interactions, for example, separating scientific processes from policy processes, and in practices that prescribe inclusion and exclusion of actors in scientific activities (Sundqvist et al. 2015; Hoppe 2009).

The boundary work described by Gieryn represents so-called *competitive* boundary work, which implies that groups are working *for* boundaries to protect their status and territory, by either defending, contesting, or creating boundaries towards other groups (Langley et al. 2019). Competitive boundary work can also be observed within organisations, for instance, when incumbent groups claim natural superiority to promote their position in the internal hierarchy, or between different occupational groups who compete over the same tasks and jurisdictions (ibid; Lamont and Molnár 2002). This means that science–society boundary work is not an activity only involving researchers. Other groups may also need to protect status and autonomy and establish credibility, which makes this a relevant perspective also for understanding the stakeholder side of productive interactions in research for policymaking.

However, boundary work may also be a strategy to accommodate cooperation and coordination between groups. Langley et al. (2019) discuss this as *collaborative* boundary work, which refers to how groups engage in negotiations and mutual learning to enable partnerships, or that boundaries are downplayed for the purpose of solving tasks *at* the boundary between groups. Downplaying here refers to actions that serve to de-emphasise the perceived distinctions between the groups. Accordingly, this mode of boundary work enables division of labour among groups, such as between researchers and civil servants, yet without dissolving the boundary between them—whether this

boundary is organisational, cognitive, symbolic, or social. Relatedly, Duncan et al. (2020) found that knowledge brokers—engaged in multiple conflicting relations at the boundary between science and policy—renegotiated and settled the boundaries at the system level to defend the credibility and legitimacy of science, which in due course facilitated productive interactions at the operational level.

2.3 The boundary between science and the policy domain

The study by Duncan et al. (2020) is illustrative of the particular dynamics at the boundary between science and policy. As a social field, the policy domain is characterised by intricate and often opaque interactions with various fields of research, and research–policy relations have been the subject of extensive enquiry over decades (see, e.g., Weiss 1979; Nutley et al. 2007). A general finding is that research seldom shapes policy in a linear and orderly process (Boswell and Smith 2017). Instead, the policy field is driven by ‘messy’ and unpredictable processes where researchers struggle for attention alongside a range of other actors and where decisions are not necessarily taken after rational considerations of available evidence (Cairney 2016).

Still, a prevailing assumption in many perspectives on public policymaking is that academic research and policymaking are best seen as two separate communities—guided by different norms and interests. This notion was first put into words by Caplan (1979) to capture the obstacles to informed and cogent use of research by policymakers and have since become the standard view in the literature on research utilisation (Turnhout et al. 2013). While the two-communities hypothesis has been criticised as misleading and simplistic based on empirical studies (Newman et al. 2016), assumptions about a *normatively* founded boundary between the domains of science and policy are still actively promoted. Science that is perceived as credible and legitimate—meaning that science is produced by trustworthy and unbiased sources—is expected to enjoy more authority in the policy domain (Sarkki et al. 2013; Cairney 2016), and it is secured through sustaining a boundary between science and policy.

By situating our study in the public policy domain as a specific context of impact (de Jong et al. 2014; Morton 2015) and making civil servants our unit of analysis, we will address how civil servants engage in specific boundary work when interacting with researchers. When seeing civil servants as strategic actors similarly to Gieryn’s (1983) view of researchers, we expect that working alternately *for* and *at* the boundary between research and policy may enable civil servants to influence and verify certain forms of research as relevant and credible, whereas other research is rejected as irrelevant to the policy domain. As such, we expect that the boundary work of stakeholders is an important precondition for whether research has an impact in the policy domain and that interactions become ‘productive’. These are issues we will analyse with our empirical data.

3. Empirical setting and methodology

To analyse the user side of productive interactions, we selected the welfare policy field, which is at the core of the Norwegian public welfare system with long-standing ties to social science and welfare service-related research. Welfare policy

is large and spans many agencies and ministries. Here, we concentrate on the sub-fields of work inclusion and integration of minorities. Our idea was not to make a formal comparison between the sub-fields but to add some variation to the analysis of the subjective experiences of stakeholders in productive interactions with researchers. Furthermore, we selected informants from two ministries, which have the ultimate political responsibilities for the policies, and from two directorates that have a dual role as knowledge providers and implementers of policies.

The organisations have stated goals of strengthening research use and related organisational initiatives. In particular, they have consolidated tasks related to acquisition and use of research and associated analysis in specialised research and development (R&D) units and networks. These units and networks represent a clearer professionalisation of knowledge work in policy; they have formal mandates of productive interaction and resemble intermediary knowledge brokering units that connect research and policy. While knowledge brokering usually concerns activities aimed at ‘pushing’ knowledge out of academia towards policymakers (MacKillop et al. 2020), our study analyses the work and context of civil servants tasked to ‘pull’ research into policy.

Although there may be unique aspects of the welfare policy setting such as its high media visibility, broad importance for the general population, and major part of public expenditure (the largest welfare agency is responsible for one-third of Norway’s national budget), our analysis is oriented at civil servants’ interactions with researchers, not the policy field itself. There are likely important differences between policy fields and between countries in science–policy relations, and we encourage future investigations to concentrate on other settings. Our analytical generalisations and conclusions may still provide valuable starting points.

3.1 Methods and data

Our study aims to answer exploratory research questions tied to a better understanding of the subjective reality of stakeholders involved in interactions with researchers. This requires a qualitative approach (cf. Merriam and Tisdell 2016), and we have chosen in-depth and open-ended interviews with civil servants from the empirical setting described in the previous paragraphs. While our overall emphasis is on boundary work towards research in the public policy context, we take as a starting point that interactions between research and policy are enacted by the civil servants who engage with and assess research for policy use. These individuals are accordingly studied as boundary workers whose practices and assessments reflect research use in public policy, and the R&D units and networks provide an enabling organisational feature of their boundary work.

In total, we interviewed twenty-two civil servants: seven from ministries and fifteen from agencies, and of these, eight interviewees had managerial responsibilities. The majority (twelve) of the informants worked mainly with R&D-related tasks in the R&D units in the ministries or agencies, and the rest were regularly involved in such tasks as representatives of their thematic policy units. We recruited informants following a snowball approach. We first approached individuals in charge of the agency R&D units and used them to identify further informants engaged in R&D-related tasks in agencies and ministries. All informants were notified about the processing

and storage of data, and the research received approval from the Norwegian Centre for Research Data.

Interviews were conducted face to face and took place in a private room in the respective organisation. The interviews lasted between 60 and 90 minutes and were recorded and then transcribed, except for two from which only detailed notes were taken. The interviews were semi-structured and employed an ethnographic interview approach with open-ended and descriptive questions (cf. Spradley 1979) about the processes and practices related to research use in the organisations. Examples of questions are as follows: How do you get in contact with research? How do you define what kinds of research is needed? Can you describe a typical procurement process? This provided us rich descriptions of the practices of knowledge work, including efforts to build a research base for the policy field, as well as reflections about how they value and assess different kinds of research, and why research is used or not in different contexts. Probes were used in particular to identify examples and concrete practices, and we did not use the terms ‘boundary work’ and ‘productive interactions’ in the interviews to access the interviewees’ unfiltered experiences.

Both authors read and analysed the transcripts using NVivo following a thematic and inductive approach with codes constructed during analysis (Braun et al. 2018), following an overall stepwise grounded theory approach (Glaser and Strauss 1967; Gioia et al. 2013). The first step was a thematic or open coding (cf. Corbin and Strauss 2015), using the interviewees’ own terms, while a second step recoded this in more direct light of the research questions of this paper. This was done separately by both authors, who then met to compare codes and interpretations. We had only minor variations in interpretations, which we see as an indication of high inter-coder reliability (O’Connor and Joffe 2020). A final round of coding focused more explicitly on boundary work. We tried to compare the codes to the interactional, epistemological, and artefactual boundaries presented in Miettinen et al. (2015), but ended up with categories more closer to typologies of boundary work (Langley et al. 2019). During this stage, the central finding of cycles of boundary work tied to productive interactions emerged.

In the empirical discussion, we start out discussing the interviewees’ perspectives on the value of research in policymaking and the cycles of boundary work associated with making interactions productive. We then structure our findings based on the types of boundary work that the interviewees engaged in, making a distinction between work *at* and *for* the boundary. For each of them, we highlight different practices and challenges, using quotes to support and exemplify the main narrative rather than to present a pyramid-like structure from quotes to abstract concepts (Gioia et al. 2013). We end with a discussion of the relations between the types of boundary work and the ‘productive’ part of interactions.

4. Findings

4.1 Managing science–policy boundaries in the public administration

Reflecting trends in the domain of welfare policies in Norway, we find that a general focus on knowledge-based policies and practices has led to a considerable ‘pull’ for research to serve as evidence for policy. Research has gone from being on the fringes of policy work to an inescapable enabler of

action: ‘You cannot really make a law or a subsidy without it being knowledge-based. It all depends on R&D. It’s like having money. It is money and knowledge that are important’ (Ministry B, informant 1). Ensuring access to and good use of research has therefore become an increasingly central task in the public administration, and it is expected that civil servants will engage in productive interactions with research in one form or another. This also forms the background for the establishment of specialised R&D units that coordinate and facilitate the use of research in the public administration.

The increased emphasis on research in the policy domain suggests that research has become an important *strategic* asset for politicians and policymakers. Research is certainly important to inform policy decisions, yet it is well established that research can also be used for strategic and political purposes, and such use is expected to spiral when the strategic value of research increases (Nutley et al. 2007). At the same time, the value of research is dependent on its perceived credibility, legitimacy, and relevance by key actors in the policy field (Sarkki et al. 2013; Cairney 2016). Ensuring that research is valid and scientifically adequate, is responsive to societal needs, and is produced according to standards of transparency, fairness, and inclusiveness of stakeholders (ibid) is considered a precondition for research to be used.

The importance of how research is produced—and by whom—is also emphasised by our interviewees and is reflected in the way they engaged with research in the welfare policy field. The civil servants linked to the R&D units and networks have a central role in managing the boundary between research and policy as facilitators of research use in the public administration. We observe that they engaged in boundary work aimed at creating and defending the demarcation between research and policy in some contexts, while negotiating and downplaying the boundaries in other contexts and along other dimensions. Furthermore, different modes of boundary work are seen in what we observe as sequences of interactions that structure much of the engagement with research in the public administration. These sequences are largely steered by processes of knowledge procurement and the commissioning of research reports in the public administration. Procurements involve a set of interactions between civil servants and researchers—direct, indirect, and financial (cf. Spaapen and van Drooge 2011). While civil servants work *for* the boundary between science and policy in preparatory phases, these boundaries are downplayed after the terms of the interactions are formally established. Finally, once the interactions are officially terminated, boundaries are recreated to maintain the credibility of the research in the public and political domain. The remainder of the empirical section will elaborate firstly on how civil servants work *for* a boundary between science and policy in preparatory phases of interactions with research and secondly on how they work *at* this boundary in the process of knowledge production.

4.2 Working *for* the boundary between science and policy

The processes of procuring research involve tasks that are overseen by the R&D units and networks. This includes reviewing the knowledge needs of the agency or ministry and

translating these into calls for research, selecting proposals from researchers and following up on the research process, and finally, receiving research reports and making them available to the rest of the organisation. The processes involve different groups—above all politicians, other civil servants, and researchers—that have different stakes in these tasks and that are bound by different and partly conflicting norms and interests. Interviewees generally claimed that politicians are steered by political ambitions and short time horizons, whereas civil servants are closer to policy implementation and to the needs of the particular policy issues they oversee, which are often based on other considerations than those of the politicians. Finally, procurements most often involve the academic community and researchers who are bound by academic norms and freedom.

The institutional solution to manage this complex web of actors and relations is found in the governance of knowledge procurement processes in policy organisations. To some extent, this comes down to increasingly formalised management of the dedicated budget for research that is allocated by the R&D units and networks in cooperation with the central leadership. Procurements are also governed by a set of administrative procedures and regulations that control much of the interaction with researchers. Still, civil servants are also awarded discretion to sometimes set aside these procedures or to introduce alternative channels for interactions. In doing this, we will show, they also negotiate how the boundaries of the policy domain are drawn against researchers and other actors in the policy field.

4.2.1 Working for boundaries within the policy domain

The public administration has a dedicated budget for procuring research. This resource determines the research and productive interactions that the policy organisations will engage in, implying that many actors have a stake in the budget. However, control over the budget has been increasingly left to the civil servants in the R&D units and networks who argued that procuring knowledge should be based on strategic considerations: ‘We felt that the way we used to operate was too casual in terms of generating useful and relevant research. So we did this to get a much firmer hand on the wheel ourselves’ (Agency A, informant 5). Yet, it was also legitimised by their special competence and their perceived special position compared to other parts of the administration. In the agencies, this was seen in their claims of being close to the daily work in the policy field: ‘It is all logical, because we are much closer to the operational work, out there. The ministry is miles away and does not know the situation out there. But we do’ (Agency A, informant 5).

Conversely, this ‘competence by location’ argument was also used towards colleagues in the same organisation by arguing that the ‘ordinary’ civil servant was too close to daily operations: ‘Initiatives from the other policy units that deal with their daily problems can often be a bit small’ (Agency B, informant 5). Hence, by evoking a special role as an intermediary that is close—but not too close—to the daily policy work, civil servants in the R&D units and networks gained greater autonomy in deciding the use of R&D budgets. But just as important was the fact that they in this way restricted much of the direct interaction between research and policy

to take place at the boundary between the R&D units and networks and the researchers.

4.2.2 Working for boundaries towards the research system

The interviews indicate that interactions with the research system are ever more formalised as they are steered by tender regulations for public procurements. Every aspect of the procurement process, from formulating calls for research with specifications about knowledge needs, timeline, and methodological requirements, to selecting researchers and signing contracts, is strictly regulated. The purpose is to ensure fair competition and equal treatment of researchers and prevent anyone getting access to information that can provide them with a hidden advantage or suggest favouritism. In practice, this means that civil servants cannot discuss specific knowledge needs or prospective calls with researchers and that researchers must prepare research proposals only based on information provided in the call. In this aspect, the boundary between the researchers and the public administration is categorical and crossing it may have legal consequences.

However, most of the civil servants submitted to the principle of equal treatment also in other settings and interactions, for example, by avoiding informal contact with researchers even when this could give them access to expertise needed for immediate problem-solving: ‘Well, [contact with relevant research units] is limited. We have to be careful, right? We have a lot of contact, but not much informal contact. This has to do with the tender regulations, which limits a bit. But we do have close contact in connection to the projects’ (Agency B, informant 4). Another added: ‘We cannot send signals if we are not going to give them money. Why should they spend their time on it? There are many such considerations that can make us a little passive’ (Ministry B, informant 1). While tender regulations provide a legal boundary between researchers and the policy domain in procurement processes, this boundary is also transferred to interactions in other settings, even when this may limit productive interactions. Instead, they reserved informal interactions for transparent arenas such as seminars and breakfast meetings where everyone could meet on equal terms without any commitments or promises.

The formalisation of interactions with researchers was, however, also presented as a practical matter: ‘[Researchers] approach us all the time! ... Both because they want access to data, but also with issues and specific proposals for research. But now we channel it into our thematic calls. They [researchers] approach us at any time during the year. It is not workable for us in the long run’ (Agency A, informant 2).

The civil servants were aware of their value as partners and informants to researchers; they control large data registries attractive to researchers, and they represent the ‘front door’ for research on the welfare services. Rather than processing every request from researchers separately, they preferred to channel these towards calls for research projects where the agenda was set by the public administration instead of the researchers and where the processing followed fixed administrative procedures. Hence, by channelling interactions with researchers into procurements processes, civil servants could also expand control over knowledge production.

In short, processes of *preparing* interactions with research—both in procurements processes and more generally—were said to be largely steered by internal considerations in the policy domain. Civil servants in R&D units and

networks used tender regulations and more general bureaucratic norms of impartiality and equal treatment to defend the boundary towards research and thereby withdraw from agendas that they had not influenced themselves. But they also created boundaries *within* the public administration to centralise control over the R&D budgets in the policy domain and in deciding who should be awarded research projects.

4.3 Working at the boundary between science and policy

While defending the strict rules for procurement as fair and transparent—contributing to equal treatment of providers and a stricter control over the outputs of research projects—some civil servants also acknowledged the limitations of these processes. One frequently mentioned limitation was the absence of an adequate ‘market for knowledge’ to supply the policy domain with research. Relevant research communities were often assessed as scarce, spread out, and often weak on priority policy issues. As a remedy, civil servants created alternative channels and ways of interacting with research that bypassed the case-by-case oriented procurement practices:

We used funds from our research portfolio to stimulate a unit – infrastructural support – and then we made sure that we were in the steering group for that [research] unit. The goal was to get more research that centred on our issues, and to [concentrate it] in one place. (...). We made a relatively general agreement, did not quite know where we were going with it and decided that we should follow up and adjust along the way (...). It is their [universities and/or research institutes] responsibility to build units, build an academic environment, where we feel that research is too weak. And I experience that we have moved a lot in recent years. Received much more relevant research. And it is [because] they know us better – we are involved in the arena. (Agency A, informant 1).

By downplaying the formally imposed boundary of the procurement regime and interacting without detailed agendas and specified output deliveries, interactions between researchers and civil servants apparently became more productive. Interviewees perceived that the quality and relevance of research improved, and the outputs were seen as more useful and epistemically desirable, echoing the epistemological dimensions of productive interactions and impact (cf. Miettinen et al. 2015). However, this was founded on specific perceptions about what was considered good and relevant research for policy and what was not.

4.3.1 What kind of knowledge counts?

While institutional boundaries between policy and research were formalised and implemented against a background of detailed regulations and professional norms, the epistemic foundation of interactions was subject to far more administrative discretion and interpretation. Demands for knowledge-based policies had not translated into formal requirements regarding what it takes for research to be considered credible, relevant, and legitimate in policy. Distinguishing ‘good’ and credible research from ‘bad’ research was largely done by civil servants themselves: ‘Not all research is good. So we are not going to use everything either... you have to have

good systems to be able to sift through what is good and bad research' (Agency A, informant 5). These systems mimicked key features of academic assessment processes, yet with civil servants in the role as reviewers. Several civil servants working with assessments of research proposals had been employed because they had experience from the research sector or formalised research competence, which could signal a certain credibility and thereby secure control over this crucial part of the procurement process. Civil servants in relevant policy sections of the agency or ministry, on the other hand, assessed the important criterion of policy relevance:

It should almost always be someone from the thematic units who has the competence and knowledge from the field of practice, that should contribute to the project having a relevant approach. But at the same time, we should not give too detailed guidance. For example, in terms of methodology, we first and foremost want the researchers themselves to consider what is best. But we will give input if we see that the methodology is not good enough – or the final product. We want to have clear opinions about that, because it is about the final delivery. But along the way, the researchers must have a certain freedom to frame it in the way they think is best (Agency B, informant 4).

The quote illustrates the ambiguity involved in drawing the boundary between guidance to ensure policy-relevant and 'good' research and keeping a distance in the process of assessing and following up on the researchers. On the one side, interviewees recognised researchers' academic autonomy as a key aspect of safeguarding the credibility of research, and possibly, to avoid suspicions that research findings had been unduly influenced. Others, however, solved this apparent dilemma by stressing that their systems for assessing research had increased the quality of the proposals.

We make increasingly tough demands on quality. And we are not yet tough enough on quality requirements, but we will make some adjustments to improve the quality further. We have strengthened quality requirements significantly: of 40–50 project applications, maybe 3 to 7–8 get [funded]. And many of those who [are certain they] will get [funding] – they do not. Because the quality is too low (Agency A, informant 6).

Here, interviewees applied common quality markers from the academic sector—degree of competitiveness and rejection rate—to signal that quality was a main consideration to them. Yet, their perception of research quality was perhaps more linked to what Langfeldt et al. (2020) call S-type notions of research quality, developed and established by knowledgeable lay groups, than traditional quality notions that originate within academia:

Researchers need to know where this policy field is located and understand the “wicked problems” thing at a macro level and how municipalities interact. (...) If they understand it, that means we can discuss how a research question is relevant and the complexity around it. And how to collect data in this world. (...) You need to know the welfare field, the field of education, the systems of the labour market, the employer perspective – all those things (Agency B, informant 4).

Extensive sector knowledge was also justified because it meant less work for the ones collaborating with the researchers. Yet, underlying this apparently practical concern was a recognition of the tacit knowledge in the sector about 'how things work' and are 'bound together in complex structures'. A mutual understanding of the sector was expected to make interactions between civil servants and researchers more productive and effective. Downplaying the boundary between research and policy was accordingly seen as advantageous in the phase when interactions intensified and empirical data should be collected.

However, some feared that researchers would get too close and cross the boundary into the realm of politics: 'There are some who have somehow “couped” our field. They write a lot about our field and they may have made up their minds in advance. And since there will be a lot of qualitative research, I sometimes wonder if .. How much emphasis can you give what they do?' (Agency B, informant 3). Distinctions between legitimate and illegitimate boundary crossing to secure relevant research were seemingly blurred at this level. Nevertheless, a distinction was upheld by stressing the methodological aspects of research: 'I think that ... for the research to have integrity ... it [should be] methodically good. Proper craftsmanship. The research in our field has been accused of being politicised. (...) So we must be concerned with the methodological aspects' (Agency B, informant 4).

By entrusting the boundary between research and policy to methodological procedures, civil servants could counter prospective accusations of politicisation and attend to the credibility of the research in the eyes of other civil servants and politicians who may use the research to gain support for initiatives and interventions. We observe that this was increasingly attached to research using experimental methods, preferably randomised controlled trials (RCTs) 'to find out what actually works' (Agency B, informant 4). Yet, it was also presented as increasingly important in the eyes of the public: 'It is crucial for politicians. It is crucial for the outside world. That they trust it. (...). When you do something new, someone will either lose prestige or money. Or you have to invest, and you have to show that it works' (Agency A, informant 6).

4.3.2 Negotiating boundaries: the production and processing of reports

Interviewees described the output of procurement processes most often as one or several reports submitted to policy-makers. Artefacts such as reports are generally expected to bridge the boundary between domains like research and policy (Miettinen et al. 2015), and much of the prospective impact of research depends on the content and reception of such reports. The reports are formally published by the respective research organisation; yet, they are intended for use in the policy domain to build support for future actions. As an artefact, the reports remained as a documentation for posterity of the interactions between researchers and civil servants, and the success of the money spent on a research project was largely seen as dependent on the reception of the report. We accordingly observe that while civil servants were careful to maintain an appropriate boundary between research and policy in other stages of their interactions with researchers, their inclination to cross the established boundary changed at this conclusive stage. The goal was first and foremost to ensure a report that

provided the policy side with research of adequate quality and relevance.

To ensure such a ‘proper’ output, public agency R&D staff and civil servants from relevant thematic policy units had underway meetings with the researchers, and they read draft reports that they provided comments on. If necessary, they suggested changes in the text: ‘Some have a lot of knowledge about our field, but others have very little. And then it becomes demanding. It takes an awful lot of time to follow up; I have never used as much “track changes” in the document as in the drafts I got there... It felt like you had to write the report yourself’ (Agency B, informant 3). While this final stage of the interaction cycle between researchers and civil servants is commonly referred to as quality assurance, it also involved extensive *negotiations* over the boundary between civil servants and researchers. After the research contract between researchers and the policy organisations had been signed, civil servants saw it as their legitimate right to engage more closely with the researchers and to influence the final output. As such, the boundary was renegotiated, and this also gave them the right to propose revisions of the research report if believed necessary.

4.4 Re-establishing the boundary: post-report interactions

Once the researchers had handed over their report, and the contract was finalised, the initial boundary between the policy domain and researchers was re-established. Interactions with researchers were largely put on hold, whereas interpretations and translations of the research report started in the policy domain. Civil servants in the R&D units and networks prepared summaries of the reports to be distributed in the policy domain, and they communicated key research results to the public. This is when the impact process may become visible, in the sense that research may be seen to have stimulated changes in the policy domain, or that it is referred to in policy debates or documents. Still, this impact was largely prepared by the previous interactions that involved both considerable work by the civil servants to create and defend boundaries to make interactions happen and then negotiate and downplay these boundaries to make impact happen.

5. Discussion

The analysis of the interaction between civil servants and researchers highlights the importance of stakeholders’ activities in productive interactions. Research is important to the users, and our interviewees acted repeatedly as stakeholders in productive interactions with researchers to obtain what they regarded as useful knowledge. These interactions were more often direct and financial than indirect (cf. Spaapen and van Drooge 2011), and most of the research was produced within the context of procurements and in close contacts between researchers and civil servants as users in the policy organisations. This involved substantial boundary work between the policy and research domains. It should be noted that the interviewees’ emphasis on procurements and contracts emerged from open questions about use of research, not from specific requests to provide details about such issues.

Because knowledge is a strategic asset in a policy environment where evidence is increasingly emphasised, control over

knowledge production and autonomy to decide when to follow the evidence (or not) is a central feature of the knowledge work in policy organisations. By centralising the knowledge work in R&D units and related networks that focus on coordinating interactions with research, the policy organisations may take increased control over the knowledge production in the field and act as a more strategic user in productive interactions. Accordingly, much of the boundary work that we observed was linked to the work of these R&D units and their networks.

Users took part in many different interactions at once. Their actions were embedded in multiple relations that they needed to navigate simultaneously, both internally in their policy organisation and externally. Rather than the broad and inclusive stakeholder role that dominates much of the literature on societal impact, we encountered users of research who needed to balance aspects such as political considerations, practical limitations, and administrative norms, while engaging in productive interactions to facilitate what they saw as useful and relevant production of knowledge for policy. These interactions were not primarily motivated by a tangible knowledge gap that needed to be filled or an unfulfilled thirst for new knowledge to solve real-world problems. Instead, the need for research was increasingly linked to strategic aims and political needs and was integrated in the routine policy work of agencies and ministries. Seen from the user side, productive interactions are accordingly guided by a sense of necessity and administrative artistry, which involves extensive boundary work both among internal units in the policy organisations and between the spheres of research and policy.

We observe that users work both *for* (maintaining) and *at* (downplaying) the boundaries between policy and research, and this work takes place along institutional–interactional, epistemological, and artefactual dimensions (cf. Miettinen et al. 2015). As expected, boundaries are sometimes deliberately *downplayed* to bring together research and policy. Reflecting the key assumption in the productive interactions approach, closer collaboration between users and researchers is supposed to induce cross-fertilisations and more relevant knowledge production and thus impact. Boundary work on behalf of the public administration is, however, initiated for more reasons than to ensure epistemologically relevant or impactful research for direct applications. We observe that users engage strategically in boundary negotiations to change the dynamics of knowledge production, by strengthening some research units over others and by twisting research interests in relevant directions. At other times, boundaries are more unwillingly downplayed to prevent futile research efforts and to ensure that research reports deliver what their proposals promised.

More often, civil servants work for maintaining boundaries between science and policy to present the research with a display of independence and to ensure that research sustains the necessary legitimacy both internally and externally. Autonomous research is cultivated as indicators of neutrality and integrity both within the policy organisations and externally, and we observed several different boundary-creating strategies in action. Institutionally, this took the form of an administrative and legal boundary that regulated interactions between research and policy in procurement processes. Epistemologically, this was observed in the emphasis on formalistic

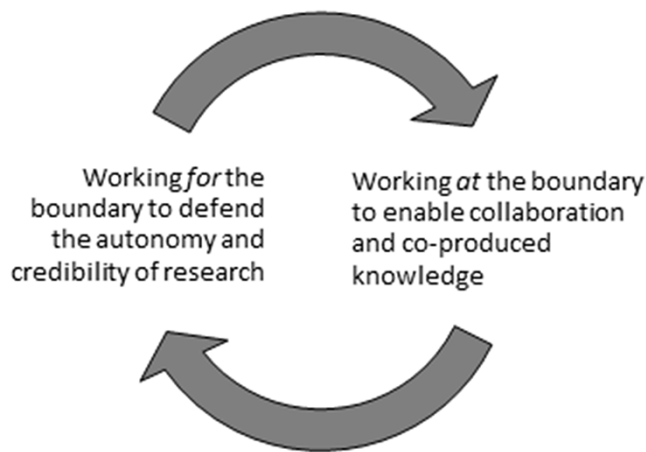


Figure 1. Cycles of boundary work in productive interactions.

approaches to knowledge production, where methods such as RCTs were promoted as tools to warrant the neutrality of research. Similar boundary work is well known in the literature on science–policy relations, where a separation of science and policy is regularly promoted as a necessary precondition for the integrity of science and effective science advice (Lentsch and Weingart 2011; Sundqvist et al. 2015).

What we observe, however, is that boundaries are also defended and even created to sustain the integrity and the autonomy of the public administration itself. Civil servants are committed to well-known administrative norms of legality, impartiality, and loyalty to their organisations (Mangset 2018). This leads them to treat researchers equally and according to transparent criteria. Non-authorized boundary crossing may be taken as a breach of norms of administrative integrity, even when actors are legally allowed to do so. We find that this is a key element of what may be perceived as a lack of interaction with researchers among policymaking organisations. Maintaining a clear-cut boundary by submitting interactions to procedural guidelines and regulations therefore grants civil servants more autonomy to decide what research they want to interact with and what they would rather keep at a distance without compromising the appearance of impartiality.

We summarise these dynamic processes of maintaining versus downplaying boundaries between research and policy as cycles of boundary work in productive interactions (see Fig. 1).

6. Conclusion: cycles of boundary work in productive interactions

Our interpretation of the data supports a dynamic perspective on boundary work. It moves through stages where boundaries first are created and defended to ensure trust in the public policy process and legitimacy based on the perceived independence of the research. Later, boundaries are downplayed when civil servants use their methodological expertise and contextual knowledge to negotiate the relevance and future usability of the research results. As a new need for research emerges or becomes defined, boundaries are defined more strictly again. It is the combination of these types and stages

of boundary work that may make research–policy interactions productive.

Our approach may provide a novel contribution to the widespread framing of impacts as the result of productive interactions between researchers and other stakeholders (cf. Spaapen and van Drooge 2011). The focus on interactions from the stakeholder side is rather uncommon, and our analysis indicates that there are limits to how extensive and how productive interactions can be. Normative and regulatory characteristics of policymaking facilitate some forms of interactions, particularly open and competitive calls for research projects, and downplay others. We see that interactions play out differently in different arenas (commissioned research versus breakfast seminars, for example) and different stages of the process (defining knowledge needs, assessing and deciding on proposals, empirical research, and writing of a final report). There may also be a feedback loop as in other forms of knowledge production: a commissioned research report may lead to (productive) effects in policymaking but also to changes in how the next round of needs and strategies for research-based evidence are formulated.

We also observe that a lot of the interaction seen from the user side is about coordination and that this task has become more salient with the establishment of formal R&D units and networks in the policy system. Internally, they coordinate the varying demands for knowledge and political considerations and shape these into R&D strategies and formalised needs that underpin later interaction with research. They also make attempts at coordinating the research side not just through thematic calls but also by providing seed funding for certain research units in academia and research institutes.

Our perspective is that the central role of the R&D units and networks in productive interactions is not about their existence or organisational status but about their active ‘boundary work’ towards the research side and towards others who make demand on research. By comparing the boundary work of civil servants in productive interactions to the previous literature related to science/research, we observe very similar types of boundary work. The users on the policy side also need to protect their autonomy, gather resources, and guard the longer-term viability of their status and practices. As such, boundary work can be seen not so much as a protection from invasive demands from ‘the other side’, but perhaps as an essential aspect of cross-sectoral interaction itself. Our recommendation to policymakers and researchers alike would therefore be to acknowledge boundary work as a constructive part of productive interactions that enables users to balance the diverse relations they engage in and create a strategic room for manoeuvring.

Our study is centred on important policy areas in a country with a strong tradition for linkages between social scientists and policy and with a high degree of openness and trust. Empirical studies of other areas and countries would in general be welcome. Some of our findings could also merit more detailed scrutiny. One example is the bilateral nature of the interaction process. We have called the civil servants in the policymaking organisations ‘users’ (a passive term that is somewhat problematic), but there are other users in the welfare system like the end users of welfare services and the public and private actors that supply the services. In our empirical data, the latter users are rarely mentioned, which we find somewhat puzzling—but it could be because

the productive interactions are increasingly delegated to specialised units. Another example is the combined emphasis by policymakers on the need for specialised sector competence among researchers but also that they largely favour somewhat abstract and generic approaches like RCTs. How public R&D units handle such possible epistemic inconsistencies is also worthy of further research.

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