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How universities influence societal impact practices: Academics' sense-making of organizational impact strategies

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Abstract

Societal impact of academic research has become a central concern of contemporary science policies. As key players in the higher education sector, universities play a crucial role in translating policy into organizational strategies, which then have the potential to shape academics' practices. This article investigates the influence that universities may have on academics' impact practices. We employ an analytical framework that combines a novel method for studying university impact strategies, sense-making theory, and insights from literature on impact. Our data consist of interviews with sixteen philosophers and anthropologists working across four universities in the Netherlands and the UK. We find that, in response to organizational goals and Human Resource Management policies, academics report changing their impact practices. We call for universities to use their influence responsibly in order to enable a broad range of impact practices.

Key words: impact practices; sense-making theory; societal impact; social sciences and humanities; organizational strategy.

1. Introduction

This article explores how universities, as organizations, may shape the impact practices of academics. Impact practices refer to the entirety of interactions between an academic and her stakeholders as well as the impacts that may result from these interactions. Our exploratory study draws on sixteen interviews with academics from four philosophy and four anthropology departments in the Netherlands and the UK. The study makes two important empirical contributions to the academic debate about societal impact. First, it considers how impact strategies can shape impact practices, rather than focusing on how they affect academic knowledge production and autonomy (e.g. Bandola-Gill 2019; Chubb and Reed 2018; Slaughter and Leslie 1997; Smith et al. 2011). Second, it focuses on impact practices in the social sciences and humanities (SSH), contributing to an emerging yet still developing body of work (e.g. De Jong and Muhonen 2020; Molas-Gallart 2011; Muhonen et al. 2020; Olmos-Peñuela et al. 2014). Based on our results, we expect that the influence of university strategies on impact practices will increase if (1) impact remains a prominent element of (supra)national science policymaking, (2) universities (further) develop their impact strategies, and (3) academics (further) develop their understanding of these strategies. The formulation of this expectation and these three conditions constitute our theoretical contribution to the societal impact debate.

The omnipresent emphasis that governments and research funders place on societal impact of academic research—also known as the 'impact agenda' (Martin 2011) has become a defining feature of contemporary science policy (Gulbrandsen et al. 2011; Lyall and Fletcher 2013; Mowery et al. 2001). It stems from the idea that societal impact does not happen by itself and therefore requires additional efforts to enable it (Geuna and Muscio 2009; Kitagawa and Lightowler 2013; Mowery and Sampat 2006). The impact agenda manifests itself in multiple ways. First, (supra)national governments invest in research with explicit societal relevance (van der Meulen and Rip 1998; Whitley 2007). For example, the European Commission identified seven societal challenges that inform the allocation of a significant share of Horizon 2020's budget (European Commission 2013). Second, funding organizations include impact as an assessment criterion when allocating research grants (Dance 2013). Third, ex post evaluation frameworks increasingly use impact as a criterion as well (Debackere et al. 2018)—which in some countries, such as the UK, directly inform the distribution of government funds to universities (HEFCE 2017).

Despite these recent developments, interactions between academics and their stakeholders (with a view to achieving

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impact) existed long before the introduction of the impact agenda (Geuna and Muscio 2009). They also predate concepts such as 'Mode 2' (Gibbons et al. 1994), 'post-normal science' (Funtowicz and Ravetz 1993), and 'Triple Helix' (Etzkowitz and Leydesdorff 2000) that consider these interactions as a component of a novel way of producing knowledge. For example, in 19th century Germany, chemists collaborated with local dye industries (Meyer-Thurow 1982). In the same vein, Dutch civil servants setting sail to former colonies would be briefed by scholars on local legal and cultural practices (Fasseur 1993). Thus, long before any top-down intervention in the science system aiming at increasing societal benefits of science, academics interacted with their stakeholders achieving what Sivertsen and Meijer (2020) refer to as 'normal impact'.

The intervention of the impact agenda in an existing system of relationships between academics and their stakeholders justifies the question 'how does the impact agenda influence existing impact practices and the societal impacts that result from them?' For instance, different types of impact can emerge; relationships with different kinds of actors can become more popular; and/ or certain types of knowledge exchange may become favored over others.

As a start to formulating an answer to the broad research question introduced above, this study focuses on the influence that university strategies can have on impact practices. Since the 1980s, a number of neoliberal reforms gradually transformed universities into strategic organizations. As a result, universities in Europe, most prominently in countries with strong modernization policies such as the UK and the Netherlands, are now organized in a hierarchical top-down manner with leadership setting clear strategic goals (Seeber et al. 2015). This means that university management can send clear signals to academics regarding what is valued and rewarded, in addition to translating signals sent by (supra)national science bodies (Nedeva 2013).

Indeed, universities as organizations have increased control over the activities of academics through these transformations. Luukkonen and Thomas (2016) state that university management can affect the research topics selected by academics via local funds, programs, and infrastructures, as well as through evaluating and rewarding performance. Beerkens (2013) shows that universities with strong managerial practices, based on performance reviews, performance-based budgeting, individual incentives, and support structures not only have higher research productivity, but a faster productivity growth as well. Rosli and Rossi (2016) argue that the impact agenda incentivizes universities to concentrate their efforts on monetization of academic research. These studies suggest that university strategies may also contribute to changes in other aspects of academic practice, such as the ones around societal impact.

Previous studies into the influence of university management on impact practices suggest that academics indeed are responsive to signals transmitted by their university. Yet, these studies tend to focus on whether a specific aspect of an impact strategy had the desired effect or not. For example, Siegel et al. (2007) reviewed the literature on start-up formation and concluded that incentivizing signals, such as equity ownership, results in more spin-offs. Another example is a study by Marcinkowski et al. (2014) on the likelihood of academics to interact with the media. They suggest that by requesting news items of academics and circulating press clippings, public relations departments generate more press releases. Even more, they show that academics who internalize a university's media strategy are more active in trying to attract media attention. These studies, however, do not consider whether incentivizing certain interactions may occur at the expense of pursuing other interactions. In other words, there is a need for a more comprehensive perspective on the influence of university strategies on impact practices.

This study aims to explore how a university's strategy for impact *contributes* to changes in academic impact practices. In other words, we do not aim to *attribute* changes in impact practices to university impact strategies. Our exploratory study does not allow for disentangling the possible effects of university leadership from the effects of other influential actors, such as funding councils and governments. Rather, we hope to identify the *mechanisms* through which university impact strategies may contribute to changes in impact practices, as reported by academics.

The remainder of this paper is structured as follows: In Section 2 we lay out our conceptual framework, which integrates insights from management and organization studies and literature on societal impact with sense-making theory. We explain our method, which is based on interviews, in Section 3. Section 4 contains our results, which show that, although it is probably too early to expect widespread effects on behavior, academics are very aware of their university's impact strategy and are currently considering, and in some cases already realizing, changes in their impact practices. In Section 5 we conclude by articulating our expectations about how future university impact strategies will contribute to changes in impact practices. Finally, we will formulate research questions to further explore these expectations and outline recommendations for practice.

2. Conceptual framework

The conceptual framework that guides this exploratory study consists of three components (Fig. 1). To systematically map the perception of signals that universities transmit in relation to impact, we build upon a recently developed framework for analyzing university impact strategies (De Jong 2019). To this end, the framework integrates seminal works from management and organization studies on strategy with literature on impact. We use Weick's (1995) sense-making theory to understand how academics translate the signals that universities transmit into impact practices. In other words, sense-making theory allows us to capture the mechanisms through which university impact strategies contribute to changes in impact practices. We draw on the insights from science studies and literature on impact and productive interactions to analyze these practices. Altogether, this allows us to analyze whether and how universities, through their strategies, contribute to changes in impact practices.

2.1 University impact strategies

As employers and major sites of scientific and scholarly research, universities provide the conditions that influence academic practices, including the interactions between academics and their stakeholders. The conditions for impact can be accessed through analyzing a university's strategy for

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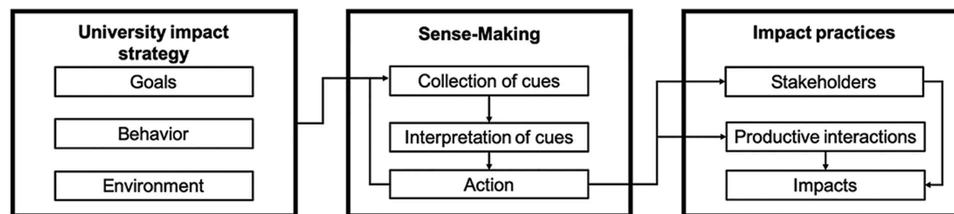

Figure 1. Conceptual framework.

impact. Such a strategy can range from deliberately planned at the start to an emergent stream of unplanned yet consistent actions (Lampel et al. 2013). In other words, a clearly documented strategy is not required for analyzing a university's impact strategy. Even if such a document is available, the analysis should include other sources as well, such as documents, interviews, and observations. De Jong (2019) has developed a framework for the analysis of university impact strategies. The framework enables us to systematically map the signals that academics perceive.

Based on insights from management and organization studies, the framework distinguishes three main elements of a university's impact strategy: goals, behavior, and environment (Chandler 1962; Lampel et al. 2013; Porter 1980).

The impact *goals* of a university signal to academics what it believes to be important achievements concerning impact. The first type of goal is society-oriented. This can be formulated in terms of results or processes. In the former case, in its most general form, a goal might be 'to increase impact on society'. More specific result-focused goals may mention particular target areas, such as sustainability, or a geographical scale, such as the region in which the university is located. In the latter case, goals aim at creating the conditions that allow for the generation of impact, without clearly defining what this impact should be. Such goals can focus on increasing the number of stakeholders that academics collaborate with or the share of academics that have developed an impact-related competence, such as presentation skills for a general audience. As Etzioni (1964) states for organizations in general and Reale and Seeber (2011) specify for universities, the aforementioned goals are phrased as the organization's contributions to wider society. Such goals can be displaced by organization-oriented goals, which are the second type of goals. The achievement of this type of goals contributes to the survival of the organization. These goals may focus on reputation, such as results of evaluations, or on resources, such as income generated through collaboration with stakeholders. Bohte and Meier (2000) suggest that if in a sector organizational output is quantitatively evaluated and compared across multiple organizations or if task complexity increases, organizations with inadequate resources are susceptible to goal displacement. Given the abundance of quantitative output indicators in research evaluations, the relative decrease of public research budgets, and the challenge that the impact agenda presents, the possibility that universities phrase impact-related goals as organization-oriented goals is very real.

A university's *behavior* shows whether and how it is working toward achieving its goals. As such, the university's behavior signals toward academics what a university actually deems of importance concerning impact. Mapping the allocation of resources for impact is key to understanding this behavior. Regarding impact, human resource policies (e.g. recruiting criteria and promotion criteria) provide signals that do (or do not) direct academics toward impact. Additionally, it is important whether specific expertise is available to support academics in their interactions with stakeholders, for example technology transfer offices and press offices. The allocation of resources to such expertise signals whether university management actually finds impact important. To capture the comprehensive strategy, it is key to establish whether certain impacts, stakeholders, or interactions are prioritized over others in the allocation of resources. For example, if business development expertise is available, but academics are not supported in contributing to evidence-based policymaking, this may signal that the former is prioritized over the latter.

Acknowledging that a university influences its environment, its *environment* also shapes its goals and behaviors. As a university depends on other organizations and social groups to get access to resources and to get legitimacy, the perceived explicit and implicit demands, norms, rules, and structures of these organizations and groups will influence its behavior (Pfeffer and Salancik 1978; Powell and DiMaggio 1991). These organizations include government and governmental bodies in the science policymaking sphere, such as the ministry responsible for science and higher education, funding bodies, and learned societies. It also includes wider society, such as regional governments, civic groups, non-governmental organizations, and companies (Charles et al. 2014; Rothblatt 1985 cited by Becher and Trowler 2001). All these groups and organizations may express expectations in relation to the role of a university in its environment. Some of these stakeholders will have more power, urgency, and/or legitimacy than others (Mitchell et al. 1997). If a stakeholder can claim all three, a university's management is highly likely to respond. Hence, we can expect a university to be more responsive to some organizations and groups in its environment than others. Benneworth and Jongbloed (2010) argue that universities are less responsive to stakeholders typically associated with the SSH as these stakeholders often have lower status and are not as well-organized as stakeholders in the hard sciences. In other words, a university may signal to its academics that responding to some stakeholders' expectations is more important than responding to others. Similarly, a university may or may not signal that a funding council's impact policy is important or that responding to the home-region's knowledge needs is a priority or not, for instance.

2.2 Sense-making theory

Sense-making is the daily process through which individuals interactively make sense of (1) ambiguous situations in

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their environment and (2) how they are expected or supposed to behave in this situation to restore the status quo or deal with the new situation that they find themselves in (Degn 2015; Sandberg and Tsoukas 2015; Weick 1979). The sense-making process consists of an endless cycle of three elements (Sandberg and Tsoukas 2015). The first is the *collection of cues*. The second is *interpretation of these clues*, which is about the development of a coherent reconstruction of the situation. One should note that this construction is not necessarily an accurate representation of the situation; often it is the most plausible reconstruction of the situation (Brown et al. 2014; Maitlis 2005; Weick 1995). As follows from Thomas' theorem '*If men* [sic] *define situations as real, they are real in their consequences*' (Thomas and Thomas 1928: 572), whether or not the reconstructed situation is accurate is of lesser importance. The third is *action*, based on what is believed to be required or expected in the reconstructed situation (Weick 1995: 35). The new cycle follows from action, as this leads to changes in the environment, which provide new cues.

Successful sense-making processes lead to the construction of shared ideas of a situation and of goals and how to achieve these goals (Weick 1979). Unsuccessful sense-making, in which no shared ideas emerge and in which action is not restored, can have negative consequences for organizations (Sandberg and Tsoukas 2015). Maitlis (2005) suggests that organizations can prevent such a situation by coordinating sense-making.

We anticipate that the introduction of the impact agenda triggered sense-making in the academic community. The major and ongoing debate that the impact agenda caused in academia is an indication that it disrupted the status quo (e.g. Chubb et al. 2017; De Jong et al. 2016; Watermeyer 2016). Sense-making assists structuring the unknown in such a situation (Weick 1995). For some academics, sense-making will be about finding out what impact is and how to generate it; for others it will be about finding out how their ongoing interactions with stakeholders fit the impact agenda and why such an agenda is necessary if they had already been generating impact (De Jong et al. 2016). In the context of our study, analyzing sense-making means that we should be sensitive to the signals that academics perceive as being transmitted by their university leadership; that we have to search for the narratives that they use to describe their university's perspective on impact; and that we have to capture whether the narratives that academics use to describe their university's perspective on impact change their impact-related behavior.

All in all, we expect that university management, as manifested through its impact strategy, is an important beacon for academics in trying to make sense of the impact agenda. The content and strength of the sense that management gives may change over time and affect the creation of clear and shared narratives. Therefore, we expect that actual effects on impact practices depend on how developed the narratives that academics currently have are.

2.3 Impact practices

To analyze how academic knowledge may generate societal impact, we have to establish the impact practices of academics: who they exchange knowledge with, the ways in which they do so, as well as the impacts that may result from these exchanges.

Academics may interact with a variety of *stakeholders*. The types of stakeholders that academics exchange knowledge with depend on at least two categories of factors.

First, as Whitley (2000) explains, there are differences between disciplines in the composition of their stakeholder structure and the recognition that academics in a discipline can yield from theirs stakeholders. Some disciplines have multiple stakeholders, including stakeholders from practice, that are interested in the knowledge that they produce, whereas others have a limited set of predominantly academic stakeholders. For example, the stakeholders of biomedical researchers can include administrators and doctors, but the stakeholders of physicists mainly consist of other academics. Even when disciplines have multiple types of stakeholders, the recognition received from one type of stakeholder may add more to an academics' reputation than the recognition from another type. For example, although lay people may be interested in the models that economists produce, peer-recognition is what counts for an economist. In contrast, in the humanities, wide recognition by lay people does add to academic reputation and can be a reason for academic promotion. As academics depend on recognition for the continuation of their research and career (Latour and Woolgar 1986), they may favor interactions with some stakeholders over others.

Second, besides recognition, there are epistemic reasons for academics to interact with certain stakeholders. For instance, their practical questions may inspire academic questions and some may provide valuable advice on case and data selection, and they may give access to sites, facilities, and data that would otherwise be difficult to obtain (Molas-Gallart and Tang 2007; Phillipson et al. 2012; Siegel et al. 2003; Voinov and Gaddis 2008). This suggests that academics need a considerable degree of freedom in selecting the appropriate stakeholders to involve in knowledge development.

To trace how academics exchange knowledge with their stakeholders, we use the concept of *productive interactions* (Spaapen and van Drooge 2011), defined as '*exchanges between researchers and stakeholders in which knowledge is produced and valued that is both scientifically robust and socially relevant*'. Productive interactions are a precursor to societal *impact*, which is defined as changes in thinking and/or acting in society (Spaapen and van Drooge 2011). A focus on interactions shifts the emphasis from studying results to processes. This approach circumvents the issue associated with temporality (as impacts may take considerable time to occur) and attribution (as other actors may also be involved in generating impact). Instead, productive interactions are about the contributions that academics make to societal change. Spaapen and van Drooge (2011) distinguish three types of productive interactions. Direct productive interactions are characterized by personal contact between academics and stakeholders; examples are bilateral meetings, presentations, and trainings. Indirect productive interactions are mediated by a material carrier, such as publications, software, and prototypes. Financial productive interactions involve an economic investment by stakeholders, as is the case in contract research or in in-kind contributions to research.

Further studies have refined the concept and demonstrated that the configuration of productive interactions in a given situation depends on the research context.

Olmos-Peñuela et al. (2014) investigate productive interactions in the SSH. They find that collaborations between

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academics and stakeholders can be successful for many years without producing any codified evidence. Such informal collaborations often occur if the involved research is at the core of an academic's work and if the collaboration does not incur significant additional costs. The authors argue that these informal collaborations are much more common than formal collaborations. As Olmos-Peñuela et al. (2014) point out, in contrast to collaborations formalized by legal departments, informality serves to create trust and does not restrict the scope of the collaboration beforehand. In other words, informality can be an important element of productive interactions. Given the importance that some countries attribute to the demonstrability of impact,[1] such informal collaborations may be increasingly difficult to maintain.

Muhonen et al. (2020) analyzed sixty impact case studies in the SSH from across Europe. The study suggests that there are at least four categories of impact pathways: dissemination, co-creation, reacting to societal change, and driving societal change. The authors identified twelve different types of pathways. This shows that the toolbox that academics have at their disposal on their way to impact is highly varied. Other studies show that the ways in which academics interact with stakeholders differ across countries (De Jong and Muhonen 2020), disciplines, and even within fields (De Jong et al. 2011; Morton 2015).

In short, academics may generate impact through a rich variety of productive interactions with a wide range of stakeholders. It is this variety that our analysis is sensitive to.

3. Method

As this is an explorative study, we cast a wide net aiming to capture a diversity of mechanisms that link impact strategies to impact practices. First, we selected two countries with elaborate impact agendas: the Netherlands and the UK. For detailed accounts of the impact agendas in these countries we refer to De Jong et al. (2016) and Kitagawa and Lightowler (2013), respectively. Balaban and De Jong (under review) provide a comparative analysis of the impact agendas in the Netherlands and the UK. Additionally, universities in these two countries are among the most managerial universities in Europe (Seeber et al. 2015), increasing the chance that we will find the mechanisms that we are interested in. Second, we selected two universities in each country. We included one comprehensive university and one university that specializes in the SSH, as we were interested to see whether strategies tailored to these domains influence practices differently. As our analysis does not suggest such a difference, we do not distinguish between the types of university an interviewee was drafted from in the analysis of our results. The types of strategies of the universities covered a spectrum from emergent strategies to deliberate impact strategies codified in a single overarching document. A more detailed account of the different strategies falls beyond the scope of this paper. Third, we selected two disciplines from the SSH, namely anthropology and philosophy. We selected these domains as it is suggested that universities are less responsive to their typical stakeholders (Benneworth and Jongbloed 2010) and that their collaborations with stakeholders often remain informal (Olmos-Peñuela et al. 2014). Additionally, there is a general discourse of these disciplines being less useful than the sciences or at best useful in different ways than the sciences (Olmos-Peñuela et al. 2015). Hence, we expect the impact agenda to pose a particular challenge for the selected disciplines. We selected four departments of anthropology and four departments of philosophy. From each department we sampled two mid-career academics.[2] We expected academics from this career level to be most responsive to university strategies in their pursuit of tenure and/or promotion. We interviewed a total of sixteen academics, including nine female and seven male respondents.

The interview protocol that guided the semi-structured interviews of 45–60 minutes consisted of three main sections. The first section asked questions about the interviewee's research, conceptualization of societal impact, and experience with productive interactions. Questions included: '*Can you give an example of a major impact achieved by an academic in your field?*' and '*Who, besides your peers and students, do you interact with as a researcher?*' The second section revolved around perspectives on impact practices in the interviewee's discipline and included questions such as '*Are there ideas in your field about how to generate impact?*' and '*Do impact activities and achievements add to your reputation in the field?*' The first and second sections aimed to understand which productive interactions and impacts were part of academic practices in the interviewee's discipline. We intentionally did not define 'societal impact' in order to allow interviewees to freely share their own understanding of impact. Nonetheless, in some cases, interviewees explicitly asked us to define impact. In those instances, we broadly defined societal impact as 'a change in thinking and/or acting based on academic research' (Molas-Gallart 2011; Spaapen and van Drooge 2011). The responses to these first two sets of questions are analyzed in Balaban and De Jong (under review), where we try to understand how tensions between national impact policies and disciplinary norms shape academic identities. The third section of the interviews protocol focused on the interviewee's perception of their university's impact strategy. It aimed to identify the signals that academics received about impact and how they made sense of them. This paper concentrates on responses to the answers in this third section. Whenever deemed necessary, we used prompts to elicit further responses to our questions. The questions and prompts that are part of the third section of the protocol can be found in Table 1. All sixteen interviews were ad verbatim transcribed and uploaded to NVivo (V12.4.0) software for qualitative data analysis. In NVivo we created a codebook based on the analytical framework to guide the thematic analysis of the interviews. The identifiers of the quotes have the following format:[Country] [University] [Discipline]—[Interviewee number within discipline].

As already hinted above, the study is part of a larger project that aims to understand how the impact agenda influences impact practices. Therefore, in addition to interviewing sixteen academics, we also interviewed over forty university leaders and professional staff at different organizational levels at the four universities where we recruited the academics. Furthermore, we also analyzed documents such as strategic plans, impact strategies, and annual reports. Although the scope of this paper does not allow us to analyze all these additional sources, we will draw on them to put interviewee quotes into perspective, whenever relevant.

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Table 1. Section 3 of the interview protocol.

Interview questions	Prompts
1. How would you describe your university's approach to impact?	I. *How does it deal with:* - *Different fields?* - *Different types of impact?* - *Different audiences?* - *Different communication channels?* II. *Do you know if this approach changed over time?* III. *How does it compare to approaches of other universities?* - *What do you appreciate about these alternative approaches?* - *What do you not appreciate about these alternative approaches?*
2. Does your university have any expectations of you concerning impact?	–
3. Are you aware of any impact support that you could benefit from?	I. *What about:* - *Training* - *Budget* - *Practical support (such as regarding communication or business engagement)*
4. Are there any rewards or incentives for impact?	I. *Was it part of your recruitment procedure?* II. *Is it part of your formal tasks?* III. *Is it part of promotion criteria?* IV. *Is it discussed during your annual job appraisal?*

4. Analysis of results

In this section we analyze our results. Section 4.1 discusses whether universities affect the interviewees' perspective on the importance of impact as a new task. Section 4.2 explores how university strategies affect the interviewees' concrete impact practices. As we will see, most interviewees are in the middle of a sense-making process. Yet, some are already translating some cues via narratives into action.

4.1 The actual importance of impact is ambiguous

In this section we show that our interviewees receive mixed signals about the importance their university attributes to impact. We begin by discussing how the academics in our study understand the impact goals of their university. After that, we look into how they perceive the university's behavior toward impact.

4.1.1 A goal that has to be met (by some)

Most interviewees believed that having impact, often phrased in generic terms, was one of the goals of their organization. Some interviewees specified what they understood to be the impact goal of their university, for example: '*So, I guess that's sort of how you use anthropology to change the world for the better in some way, or to help us understand the world's inequalities most of the time. […] But it's sort of a marketing strategy too*' (UK U2 A7). Remarkably, this interviewee was the only interviewee who talked about organizational or secondary goals. Others understood goals in terms of stakeholders, for example: '*The department wants to be the kind of place that does philosophy that isn't just read by other philosophers*' (UK U1 P5). And another interview phrased the university's goal in terms of processes: '*They are aiming for cross-pollination between schools and departments. It is a very explicit goal to have people collaborate on such a theme across departments*' (NL U2 P3). In other words, this interviewee understood the impact goal of their university as the stimulation of interdisciplinary collaboration. Still, this scholar was not fully convinced of the priority that impact had:

> '*For example, recently the vice-chancellor visited us and we felt a need to explain who we are, what we do and specifically how great we are. So there is a PowerPoint* [presentation] *of 10 slides. One slide about impact and then you show all the stuff that people do. Very nice if you can evidence that, but again, if that slide would not have been included, "What are you doing concerning impact?," would not have been the first question. Perhaps it would have, perhaps it would have…*' (NL U2 P3).

The open doubting of the constructed narrative shows that this interviewee was still in the middle of a sense-making process. Others concluded that impact could be left to colleagues:

> *So, everyone knows that there is, everyone knows and the negotiation that comes out of the demands for a more impactful department are clearly for everyone to see. It's more like a ghost really, we all know that it's there, we all know that we should pay homages to it but then we have a ritual expert that deals with it* (UK U1 A5).

This ritual expert was that one colleague who did have an impact and thus ensured that the department was able to submit an impact case to the Research Excellence Framework (REF). This indicates awareness of the importance of impact to actors, the REF in this particular case, in the university's environment.

Interestingly, two out of four interviewees at U2, which has an explicit impact program, only talked about the program when asked about it. These interviewees seem to be at the very beginning of a sense-making process. If they had completed the process and reached the conclusion that impact could be ignored, we would have expected a more elaborate and perhaps even spontaneously presented narrative of the impact program. Instead, the interviewees said '*I know that there might be three areas within the impact program*' (NL U2 P4) and '*I cannot recall what the themes* [of the impact program] *are, but I do know that they related quite poorly to the focus of the department*' (NL U2 A4). This indicates a discrepancy between academics and leadership, as the dean of the latter interviewee said that '*those three themes* [the themes of the impact program] *relate quite well to what excites people*'.

Altogether, the academics that we interviewed were aware of the general importance that their universities attributed to impact. The details, such as concrete objectives and responsibilities, seemed to be less clear.

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4.1.2 Poorly resourced, perhaps not even rewarded, but often expected

Major sources of cues that our interviewees used to make sense of impact as a task were Human Resource Management (HRM) policies. We distinguish between four elements: hiring criteria, task description, annual review, and promotion criteria. As we will see, from the perspective of our interviewees, the HRM policies were not very coherent when it came to impact. Arguably, this obstructed the sense-making process.

Most interviewees said that impact was part of their university's hiring criteria, although their perceptions about the importance of impact varied. According to several interviewees it was *often considered*, but only as a mere extra that '*most likely [would] not be number 1 or 2 on the list*' (NL U1 P2). Others pointed out that impact was the main criterion to hire some of their colleagues, as two anthropologists from the same department independently emphasized: '*There is people here at the department that have been hired because their work is deemed to be impactful*' (UK U1 A5) and '*I have heard that when* [colleague 1] *and* [colleague 2] *were hired, that this* [impact] *was a major point for both of them*' (UK U1 A6). Especially the latter interviewee clearly based her position on cues that she gathered through social interaction. The narratives that these interviewees created seemed to contrast with their university's perspective. Although a member of the central leadership team did not specifically talk about the importance of impact when hiring people, the following quote suggests that impact was not addressed in HRM policies: '*We are a research intensive institution, promotion is going to come through peer review research confirmations* [...] *you don't have to do any of the stuff* [impact related activities] *in order to get promoted or in order to get a pay award*'.

Then, when hired, according to our interviewees, impact was rarely part of formal task descriptions. It was not always clear whether time could be allocated to impact. One interviewee believed one might get time for impact, as the department provided time for other types of academic activities as well: '*Maybe they would give you time off for that* [running an NGO on the side]. *I know that if you were a journal editor or if you're engaged in certain academic activities then you can get time off in other areas*' (UK U1 A6). Yet, most interviewees constructed narratives about the lack of time for impact. For example: '*Recently I gave a lecture for* [a club interested in the country in which the research took place] *on a Sunday afternoon. Well, that is my Sunday afternoon.* [...] *And I don't say to myself: "I will take Monday morning off then."*' (NL U1 A2). Also:

Interviewer:

'*For example, is spending time on things like being a board member of* [a civic organization on the interviewee's research topic] *included in your contract?*'

Interviewee:

'*No, no. No, that is very clear.* [...] *There are only a few people who are allowed to spend time on those things as part of their contract. For the vast majority, 95%, it is charity in the evening, or working on the train*' (NL U2 A4).

Interviewees from several departments confirmed that a small number of colleagues were allowed to spend some of their time on impact-related activities. Yet, their own lack of time for impact led to some confusion in how to deal with impact: '*So how do you deal with that? Well, not in an ok way. And I don't really know how to do it in a good way. It would be really good if it would be appreciated in hours as well*' (NL U1 A1). Other interviewees mentioned that although having an impact would reflect well on them, not having an impact would not have any negative consequences: '*I don't have to* [have an impact]' (UK U2 A7) and '*I think it is my sense of the local departmental culture is that if I did nothing, I'd be fine*' (UK U1 P5).

Although impact rarely seemed to be part of formal task descriptions, at three out of the four universities it was discussed in annual reviews: '*It is part of the annual review*' (NL U2 A3). Especially the associated forms seemed to be an important source of cues:

Interviewee:

'*Well, I know the university wants it* [impact]'

Interviewer:

What makes you say that?

Interviewee:

'*I notice it because it is always part of the documents, for your* [annual review]. *I notice, I just know it is like that*' (NL U1 P1).

And: '*When you fill out your* [annual review forms] *or whatever, it has a public engagement section*' (UK U2 A7). Only at one university it seemed not to be part of annual reviews, as one interviewee clearly said: '*In these annual meetings it is never brought up*' (UK U1 P6).

The position of impact in promotion procedures was unclear to the majority of interviewees. Some had no idea as they have not yet looked into promotion regulations. Most interviewees used phrases such as '*I believe it plays a role*' or '*I think it is important.*' One interviewee observed that '*special professor positions are given to people who do more of those things*' (NL U1 A2), while two other interviewees were certain that '*it is taken into account, it counts*' (NL U2 P3) or even mentioned it in their promotion procedure as '*it was already enough part of the discussion to mention it*' (NL U2 A3). An anthropologist (NL U1 A2) also mentioned an indirect link between impact and career progression. According to this interviewee, impact was increasingly a criterion in funding procedures of organizations in the university's environment and as acquiring funding is a criterion to get promoted, this interviewee concluded that impact was important to move up the academic ladder.

So, our interviewees perceived that impact was often part of the hiring criteria, but not of formal task descriptions. Impact activities and achievements were being discussed during annual reviews at most of the selected universities; however, whether this led to promotion was unclear.

4.1.3 Limited visibility of support

Finally, the awareness of organizational support for impact distinguished the universities in the Netherlands from those in the UK. Among the researchers at the Dutch universities, awareness of supporting expertise was limited. Only one Dutch interviewee referred to an aspect of such support: '*Our communication officers are focused on it. Every now and then they ask: 'Can we offer media support?' and such things*' (NL U1 A2). Both British universities offered support for describing impact in funding applications and the REF, for example '*There is like an impact officer, who helps you write impact statements* [...] *for like grant applications*' (UK U2 A7). Another interviewee at this university talked about '*marketing*

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and impact people', saying '*I hate* [...] *that this language of economics just comes in everywhere*' (UK U2 P8). In other words, to this interviewee the job titles of support officers signaled that economic aspects were an important element of impact to the university. At one of the English universities financial support for impact was available: *'A public event that I have coming in June is going to be paid by* [the university]' (UK U1 A5) and '[name of the fund] *is a fund to which you can apply to do small kind of research projects, but also to support events like workshops, exhibitions, travel to conferences or a variety of other kind of activities'* (UK U1 A6). Yet, the available expertise did not seem to be an explicit source of cues for our interviewees to construct narratives about whether impact was important or even get an understanding of what types of productive interactions or impacts should be prioritized.

To summarize, a university's impact goals and HRM policies were important sources of cues for academics. The perspectives of a university's important stakeholders, mostly actors from the science policy sphere, were taken into account as well when interpreting the university's goals and behavior. Available support did not seem to be a prominent source of cues.

4.2 Shifts in practice

In this section we discuss how interviewees believed their university liked them to approach impact and whether the interviewees were responsive to these signals.

4.2.1 A more prominent element of research

To begin, the majority of the interviewees indicated that they now considered impact more than before. In some cases, this could be understood as increased awareness of the importance of impact: '*We are forced to think about impact...to think about impact in a more structured manner*' (NL U1 A1). The interviewee added that this was not necessarily a problematic development. Another interviewee said that the attention given to impact made her realize she needed to adapt her publishing behavior: '*I can see more the limits of my research. It's made it stark for me where I need to think perhaps more about writing for outside of my discipline or who my audience will be when I publish something*' (UK U2 A7).

In other cases, the university's strategy contributed to impact becoming a more prominent factor in designing research. This, according to the following interviewee from a university with an impact program, was a more natural way than adding an impact statement in a funding application to a research funder:

> *'As a figure of speech, from the start* [when applying for funding from the university's impact program] *the focus is on: 'alright, can I do something on* [theme 1], *can I do something on* [theme 2]*?' In that case, one starts to think taking the theme as a point of departure, rather than 'I've got my own theme and I need to find convince an organization to fund it.*' (NL U2 P3).

4.2.2 Upcoming spatial and social redistribution of benefits

The above quotes demonstrate a change in thinking about impact on a more general level: thinking about impact seemed to have become part of everyday academic practice. The interviews, however, also revealed how (perceived) impact expectations led researchers to reconsider existing impact practices. Often, these reconsiderations were provoked by signals from important stakeholders in the university's environment, most notably national evaluation frameworks and funding criteria.

A Dutch anthropologist, who studied a community of patients with a chronic and transmittable disease in a developing country, spoke about possibly shifting the geographical location of her impact efforts: '*It* [the importance of impact in funding applications combined with the importance of acquiring funding for career progression] *makes me seriously consider to do more things* [impact related activities] *in the Netherlands'* (NL U1 A1). Note that the Dutch Research Council in an impact manual says that '*The target group can be local, provincial, national or international in character and its scope can be within the Netherlands as well as abroad*' (NWO 2017: 2).

In other cases, potential shifts in the type of audience being addressed were observed. These shifts seem to redirect impact efforts to at least more organized stakeholders and possibly more powerful stakeholders. An English philosopher struggled to understand why radio talks on one of the most popular national radio stations—which he found impactful—were less rewarded than influencing the policies of a professional body. It forced him to contemplate his willingness to change his impact-related efforts:

> '*Yes, so back when it seemed like I could just do what I thought was important anyway and be rewarded for it, I was all I favor. But now it's going to be like 'If I do this, I have to change what I want to do'. And I don't know if that is attractive to me.*' (UK U1 P5).

Another English anthropologist said: *'With the impact expectation, if I was doing that, I would think: 'Okay, how can I get a government minister to visit this group?' Yeah, exactly, that is what you would end up thinking, right, instead of 'Okay, how did it impact on the women that I worked with?"* (UK U2 A8).

Interviewees also discussed changes in actual behavior related to impact. A few interviewees explicitly said that impact expectations did not influence their behavior, as their own values would prevail over the interests of the university:

Interviewer:

'Does that [the perception that a media appearance is higher rewarded than a workshop for policymakers] *influence your decisions?'*

Interviewee:

'No'. [...] '*I believe that, in the end, perhaps, it* [being able to list impact achievements on a CV] *does not make a difference in what you do and don't do'* (NL U1 A2).

And:'...[the institutional evaluation] *is so far away in time and on such an abstract level, and about such a large number of people, that it does not make you think: 'Well, I need to schedule a few more talks, because not doing so would reflect badly upon the institute. No one thinks like that, I believe"* (NL U1 P2). Also: '*I want to work on the problems that I am interested in, focus on teaching as well, and not do something merely or primarily or with the focus that it will help me advance the career. I think it is kind of sad and you*

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really shouldn't be a philosopher, then you should do something else.' (UK U1 P6). Yet, others acknowledged that they might be willing to alter their behavior at their organization's request: '*Is it the school asking me to do something else? I think it is negotiable.* [...] *If that means completely travestying the type of work that I do, I perhaps won't do it but I don't think that is the case.*' (UK U1 P5). The same interviewee observed that due to '*some pressure,*' his colleagues in philosophy of science changed their stakeholder focus from '*their more natural thing* [talking to climate scientists]' to '*an agent who's not in academia, so I think that has shifted their focus a bit from what they would've been inclined to do.*' Another interview said: '*...it forces us to...in a certain way...to think about that. To more deliberately approach the media, perhaps*' (NL U1 A1). And a third interviewee admitted: '*I have to say, as annoying as all these directives about impact are, it's because of them that... I've been thinking about different ways that I could have impact in the things that I do. Like, for example, this activity with* [the British branch of a globally operating NGO]' (UK U2 A8). And finally:'*Of course, If I am thinking selfishly about career development and things like this* [a project with a significant anticipated impact], *I want to be able to have these things on my CV*' (UK U2 A7).

In short, while some interviewees indicated that they did not expect to change their impact behavior in response to their university's strategy or more deliberately integrate impact into their research, others stated that they were willing to consider changing their impact practices if they had not already done so. We can observe geographical locations of impact, types of stakeholders, and types of productive interactions being reconsidered or having already changed. In terms of sense-making: some of our interviewees were still in the process of constructing a narrative about the new situation and their response to it, others were deliberating over the appropriate response, and some had already converted their narrative into action.

5. Concluding remarks

5.1 Conclusion

As a start to answering the broad question of 'how does the impact agenda influence existing impact practices and the societal impacts that result from them?', this study explored whether and how universities contribute to changes in academic impact practices. To this end, we interviewed sixteen academics from anthropology and philosophy in the Netherlands and the UK. The core of the conceptual framework that guided our study is sense-making theory (Weick 1995). Using this theory, we were able to create a link between university impact strategies on the one hand and the impact practices that academics talked about on the other hand. Our analysis was sensitive to the cues that our interviewees derived from their university's impact strategy, the narratives that they constructed based on these cues, and the (deliberations over) actions that resulted from these narratives.

Although our sample of sixteen interviewees from two disciplines in the Netherlands and the UK is modest, our study confirms the expectation that universities contribute to changing impact practices by signaling their impact goals and by mediating the goals of prominent stakeholders in the science policymaking sphere through HRM policies. The mixed signals that academics perceive, however, are a lost opportunity for universities to provide guidance in how to deal with the impact agenda.

The university's impact goals and HRM policies seem to be the most prominent sources of cues for academics. A possible explanation for the importance of HRM policies for our interviewees is the managerial fashion in which universities in the UK and the Netherlands are organized (Seeber et al. 2015). Given that the impact agenda still is a relatively new phenomenon and that many universities, including universities in our study, are in the midst of developing impact strategies, it comes as no surprise that some academics have not yet begun their sense-making process, while others still are in the middle of it. Nonetheless, universities contribute to putting impact on the agenda of academics. As a result, some academics in our sample considered changing their impact practices based on their understanding of their university's perspective on impact and some had already done so, while others stated they would most certainly not change their behavior. These findings are in line with the literature that shows how leadership's vision and behavior can guide sense-making processes (Gioia and Chittipeddi 1991) but that not all faculty members are equally receptive to these signals (Humphreys and Brown 2002).

Importantly, our findings demonstrate that the current deliberation on shifting impact practices may hinder the access to knowledge of certain types of stakeholders. Contrary to Rosli and Rossi's (2016) prediction, we did not necessarily observe a narrow focus on monetization. Instead, we observed an upcoming concentration of efforts on reaching stakeholders that are already in privileged and even powerful positions. As the impact agenda intends to make academic knowledge more widely available, this development is a serious undesired side-effect.

Based on our explorative study, we anticipate that universities, as organizations, will increasingly influence impact practices. For this to occur, several conditions need to be in place. First, the impact agenda needs to remain a prominent element of science policymaking. It is commonly anticipated that the impact agenda is 'here to stay', which fulfills the first condition. An indication of the next step of the impact agenda is United Kingdom Research and Innovation's announcement that impact will be an integrated part of research proposals rather than a separated section. Second, universities need to (further) develop their impact strategies. Although universities in the countries that we included in our study are among the most managerial in Europe, universities in other countries, such as Italy (Loi and Di Guardo 2015) are developing impact strategies as well. If the impact agenda remains at least as prominent as it is at the moment, we expect that more universities will develop new and improve existing impact strategies to secure access to funding. Smerek's (2011) conclusion that leadership tends to formulate broad goals first and only later on prioritizes supports this expectation. Third, academics need time to make sense of their university's impact strategy before they translate cues and narratives into action. This process will be accelerated if universities coordinate sense-making processes (Maitlis 2005), for example by organizing department meetings or university-wide events on impact. This will make the changes more tangible and will deepen academic's sense-making processes (Kezar 2013). With these conditions in place, we expect that in 10 years' time studies on the same topic as this study will find ample evidence of changes in impact practices.

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5.2 Future research

It goes without saying that the increasing contribution of universities as organizations to changes in academic impact practices requires more research, including studies with larger samples. Additionally, our study does not allow for disentangling contributions from different policy actors in the environment of academics, such as those from funding councils and governments. We anticipate at least three lines of inquiry. The first is to understand what conditions shape the characteristics of a university's impact strategy. For example, when do universities opt for a strategy that aims to serve society? And when do they opt for a strategy that aims at organizational survival? (Etzioni 1964). Also, what factors explain the types of impact and/or stakeholders that a university addresses in its strategy? The answers to these questions will improve our understanding of the signals that universities transmit to academics. It is these signals that are collected as the cues that start sense-making processes. From this follows the second line of inquiry, which concentrates on understanding what facilitates and hampers sense-making of impact by academics. What (sources of) cues are most powerful? How can sense-making on impact be successfully coordinated? What is the role of social interaction in making sense of impact? Why are some academics responsive to their university's impact strategy while others are not? How do signals from other sources such as funding councils and research evaluation systems interact with signals from the organizational level? Do we observe differences between disciplines and countries, and how can we explain these differences? Addressing these questions may be done both quantitatively and qualitatively. The answers will help us better understand the mechanisms through which universities affect academic impact practices. The third focuses on changes in impact practices. Can we observe them in other disciplines than the disciplines included in this study? For example, do we see changes in impact practices in the sciences, as the practices in these disciplines may be more closely aligned with the goals of university impact strategies? Are academics in some disciplines further in their sense-making process, thereby having already realized actual changes in their practices? What are the consequences of these changes? For example, do changes in impact practices, more specifically in the selection of stakeholders, make knowledge more available to those in powerful positions at the expense of more vulnerable groups, as two of our interviewees from anthropology talked about?

Apart from effects on society, such as the aforementioned access to knowledge, furthering our general understanding of how the impact agenda influences impact practices is in the interest of science itself. If the impact agenda changes the stakeholders that academics develop relationships with, this may affect academic knowledge development. As we discussed in Section 2.3, questions from stakeholders are an inspiration for academic questions, and academics regularly gain access to research sites, facilities, and data through their stakeholders (Molas-Gallart and Tang 2007; Phillipson et al. 2012; Siegel et al. 2003; Voinov and Gaddis 2008). Depending on the extent to which the impact agenda is actually changing, further investigation is needed into existing patterns of productive interactions between academics and their stakeholders. Hence, we may study how these changing patterns affect academic knowledge development, as collaboration with certain stakeholders might be crucial for getting access to data, for instance.

5.3 Recommendations for practice

As our study is exploratory in nature, we are cautious in formulating definite recommendations for practice. Nonetheless, we believe that our study has implications for universities and academics.

We call for university management to be aware of their power in influencing impact practices by setting impact goals and to use this power responsibly. Some society-oriented goals can disadvantage interactions with certain types of stakeholders, and organization-oriented goals may provide perverse incentives altogether. Such an enabling or guiding role would respect the autonomy of academics in choosing impact practices. Additionally, the inclusion of impact in HRM should not only be regarded as a way to stimulate academics to generate impact, but also to keep those academics who are already motivated to have an impact inside the system. Otherwise, the hopeful statement that 'a new generation who is motivated to have an impact is on its way' will arguably echo for many more years. We envision a situation in which universities enable academics to explore and develop impact practices that academics believe are appropriate responses to the omnipresent expectation of societal impact.

Academics should use their agency to engage in bottom-up sense-giving practices. In other words, they should signal to university management what impact strategies best enable their impact. By doing so, they can help universities to develop impact strategies that do justice to a wide variety of productive interactions and stakeholders that play a role in impact generation and knowledge development. For instance, academics can develop narratives about why certain productive interactions are crucial to generate impact in their discipline or why involving certain stakeholders is important to conduct research in their discipline. Departments have a responsibility in coordinating these sense-giving practices toward central management.

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Notes

1. For instance, consider the REF's Guidance on Submissions (Research Excellence Framework 2020: 23) which states that '*each submitted impact case study should include details of external sources of information that could corroborate claims made about the impact of the submitted unit's research*.'
2. We had to select two senior academics as within two of the departments no second mid-career academic was available for an interview.

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