Understanding Collaborative Interactions in Relation to Research Impact in Social Sciences and Humanities: A Meta-Ethnography

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ABSTRACT

The number and type of collaborations between researchers and stakeholders has increased significantly. This responds to the demand from policymakers, funders, and citizens that researchers should help to tackle important social issues (e.g., climate change). However, there is little knowledge about how collaboration processes are experienced, how we can theoretically conceptualise them, and how in this way we can develop efficient collaboration methods that contribute to solving urgent societal problems. In this meta-ethnography we gathered relevant knowledge from carefully selected qualitative studies. A title/abstract analysis of 3422 articles from Web of Science and ProQuest led to the interpretative analysis of qualitative data from eight publications. The results of this study show that despite the need for a better understanding of complex collaborative interactions, the differences (or asymmetry) between organisations to which various partners belong hinder efficient collaboration. Bridging figures (brokers) can play an essential role if they succeed in drawing diverse stakeholders out of their organisational context into a new dimension that allows creativity and mutual understanding, but that also allows conflict and distortion. In ideal circumstances, this leads to a quasi-automatic transfer of knowledge between partners that takes place naturally and in both directions (knowledge diffusion).

KEY WORDS: Collaborative Interactions, Knowledge Mobilisation, Societal Impact, Meta-Ethnography.
INTRODUCTION

The societal impact of research is an increasingly important goal for science policymakers and funding bodies. Some well-known examples include the Research Excellence Framework in the UK and the Standard Evaluation Protocol in the Netherlands (see Sivertsen, 2017 for an overview). Research agendas and programmes are driven by the expectation – also voiced in the public debate – of a societal return on investment in science (Muhonen, Benneworth & Olmos-Peñuela, 2020). Although the development of an impact agenda for science programming and assessment is relatively new, a whole lexicon of impact-related concepts has already appeared. Often-used terminology includes ‘valorisation, third stream activities, societal benefits, societal quality, usefulness, public values, knowledge transfer and societal relevance’ (Bornmann, 2013). However, despite the elaborate new vocabulary, what actually generates positive research impact remains poorly understood (Pedersen, Grønvad & Hvidtfeldt, 2020; Zych, Berta, & Gagliardi, 2020). In this study we therefore focus on the conditions and processes associated with collaborative interactions that are associated with positive impact. After all, as Aiello et al. (2020: p.12) have recently stated, “research with social impact is collaborative; collaboration at different stages of the project and among different agents – within and outside academia – appears to be a necessary component of success in achieving social impact”. In this study, an interpretative approach will allow us to grasp the meaning attributed by researchers and their stakeholders to collaborative interactions. We first elaborate on what characterises these collaborative interactions, and secondly on the associated process of knowledge mobilisation.

Characteristics of Collaborative Interactions

Processes that underlie the so-called ‘pathways to impact’ in Social Sciences and Humanities (SSH) have put a strong emphasis on collaborative interactions. For example,
Spaapen and van Drooge (2011) refer to understanding what they call ‘productive interactions’ (i.e., exchanges between researchers and stakeholders in which knowledge is produced and valued that is both scientifically robust and socially relevant). Sivertsen and Meijer (2020) define societal impact as the results of active, productive, and responsible interactions between (units of) research institutions and other organisations according to their purposes and aims in society. However, collaborative (or productive) interactions can take diverse forms. For example, in a recent systematic evaluation of 60 European impact case studies, Muhonen and colleagues (2020) identified co-creation (i.e., repeated points of contact between scientific and societal partners mediating wider societal changes) as one of the important drivers behind research impact. The evaluation showed that co-creation comes in different forms. In some cases it refers to the regularity of collaboration, the use of open access approaches or the interdisciplinary character of the approach. A formal dialogue is not always a conditio sine qua non: impact can be generated by simply spreading evidence-based ideas through publicity. Researchers can also ‘lend’ their scientific expertise in wider societal contexts (Muhonen et al., 2020). So although co-creation refers to repeated points of contact between scientific and societal partners, these contacts are positioned on a continuum between direct and indirect interactions. In that perspective, Spaapen and Sivertsen (2020) refer to ‘personal’ interactions involving direct contacts between humans or mediated interactions through some kind of material ‘carrier’ (publication of texts, exhibitions, models, and films), but also financial interactions occurring when potential stakeholders engage in an economic exchange (Spaapen & Sivertsen, 2020). The latter shows that the economic dimensions, allowing certain resources to be used, are also essential in making collaborative interactions possible.

Another way of looking at collaborative interactions is by evaluating stakeholder involvement. Collaboration between stakeholders can occur in many different forms, such as:
a) formal support: a stakeholder is not involved in a project but endorses and provides legitimacy for it; b) responsive audience: the stakeholder provides ideas, information and tactical advice; c) integral partner: a stakeholder is engaged as a significant partner in the project and helps to shape both the way it is carried out and the outcomes. Societal actors can thus engage with the scientific process to different degrees (Martin, 2009; Ross, Lavis, Rodriguez, Woodside & Denis, 2003). The assumption is that close collaboration between researchers and societal partners from the initial phases of research will eventually increase its impact on society (Lavis, Lomas, Hamid & Sewankambo, 2006; Nutley et al., 2007; Orr & Bennett, 2012). The more involved societal actors are, the more likely it is that the research will meet their needs, be picked up, and have impact through knowledge mobilisation.

**Knowledge Mobilisation: Practical Use and Powerful Ideas**

Several iterative theoretical models explain how research impact arises through sustained engagement between researchers and societal stakeholders (Nutley, Walter & Davies, 2007; Greenhalgh & Wieringa, 2011; Gronvad, Hvidtfeldt, & Pedersen, 2017). In mapping these collaborative interactions, it has been proven useful to distinguish between: 1) institutions (e.g. universities versus funding organisations); 2) types of relationship (direct, indirect or fuzzy); 3) knowledge flows (direction, type, intensity or quality); and finally 4) the content of the collaboration (Oancea, Florez Petour, & Atkinson, 2017). This is reflected in concepts such as ‘knowledge transfer’ (referring to a unidirectional approach) and ‘knowledge exchange’ (referring to a more interactive process that includes concepts such as sharing, generation, co-production, co-management, and brokerage of knowledge) (Fazey et al., 2013; Mitton, Adair, McKenzie, Patten, & Waye Perry, 2007). In this respect, Rowe and Frewer (2005) introduced three different engagement concepts that are associated with regulating the flow of knowledge from scientists to societal users: public communication (one-way flow of information from the sponsor to the public); public consultation (one-way flow of information
from the public to the sponsor, but without real dialogue); and public participation (information exchange, includes dialogue). The concept of ‘knowledge mobilisation’ is most comprehensive in the sense that it not only taps into the connection between researchers and those seeking to make evidence-informed decisions, but also refers to the aim of achieving positive impact in terms of social and/or environmental benefits (Bayley, Phipps, Batac & Stevens, 2018). Bayley et al. (2018) identified 80 competencies in diverse categories (e.g. communication and management skills) that contribute to achieving research impact through knowledge mobilisation. The conceptual framework of Meagher, Lyall, and Nutley (2008) transcends the notion of competencies needed to achieve impact. It highlights the involvement of different categories of actors (e.g., policymakers, practitioners, and researchers); their roles; and the likely flows of knowledge, expertise, and influence between them. The authors recognise that research knowledge can take many forms – for example, not just knowing ‘what works’ but also knowing ‘how things work’ and knowing ‘why things happen’ – and that these different forms of knowledge are likely to impact in different ways (ranging on a spectrum from direct instrumental impact to indirect conceptual impact). Knowledge mobilisation can thus lead to very practical beneficial outcomes (e.g., the development of a smartphone application) as well as to powerful new ideas (e.g., environmental awareness-raising through using a concept such as ‘global warming’).

To conclude, collaborative interactions are thus characterised by a direct or mediated flow of information (e.g., communication between people or through media), that is (rather) uni- or bi-directional (e.g., top-down communication versus dialogue), and with strong or weak involvement of diverse stakeholders. For the purpose of this study, we will particularly focus on direct interactions that involve dialogue with stakeholders and on studies that at least discuss whether or not research impact has been achieved. However, proving research impact as the result of these collaborative interactions remains quite challenging (Cook, Boote,
Buckley, Vougioukalou, & Wright, 2017). Moreover, the concept of impact itself has some important drawbacks. Within scientific communities, it is still a very contested topic (Spaapen & Sivertsen, 2020) and it simply does not mean the same thing across institutions, geographies, and research cultures (Pedersen et al., 2020). In this study, we will therefore particularly focus on how researchers and stakeholders understand collaborative interactions in relation to research impact. In order to achieve conceptual innovation from an interpretative approach, we will conduct a meta-ethnography. The latter allows us to synthesise qualitative studies and grasp the perceived meaning related to collaborative interactions and research impact.

METHOD

Meta-ethnography has been developed as a method of synthesis that aims to integrate and interpret findings from multiple qualitative studies (Kinn, Holgerson, Ekeland, & Davidson, 2013). The goal of the synthesis is to compare and contrast studies with one another, thereby providing new interpretations, rather than attempting to provide generalisation (Hannes & Lockwood, 2012). In other words, the goal is to come to an interpretation that is more than the sum of the studies. This distinguishes meta-ethnography from other methods for qualitative synthesis and is an aspect that proved useful in our review. Additional merits of meta-ethnography include its systematic approach and the high level of interpretation, which allows for meta-analysis even of emerging (sub)fields of research with relatively low specialisation and thus low gross numbers of specific studies and data. From that perspective, this approach is different from traditional literature reviews (Dixon-Woods, Agarwal, Jones, Young & Sutton., 2005; Hannes & Lockwood, 2012). It does not aim to summarise an entire body of available knowledge or make statistical inferences. To stay close to an ‘ideographic approach’ (i.e., maximally approaching a unique contextual experience), including an overly large number of studies is to be avoided. Although the number of studies
included in meta-ethnographies ranges widely (Campbell et al. 2011; Dixon-Woods, Booth & Sutton, 2007; Hannes & Macaitis, 2012). 40 studies is deemed the maximum number to allow for ‘sufficient familiarity’ (Campbell et al. 2011). Noblit and Hare (1988), who are acknowledged as the developers of the meta-ethnography, included only two to six studies in the core text of their studies. The main focus is grasping an in-depth understanding of phenomena that are to a certain extent comparable over studies.

**Literature Search and Selection Process**

The primary collection of studied literature was derived from the Web Of Science and ProQuest online databases. Queries were run using a fivefold search string with a combination of following keywords (including orthographic variants and synonyms): (a) university, research, academia, science; (b) stakeholder, quadruple helix, triple helix, government, policy, business, industry, SME, civic, community, society, citizen, non-academic, decision-makers; (c) co-creation, co-production, interaction, collaboration, participation, partnership, relation; (d) impact, valorisation, uptake, dissemination, knowledge transfer, knowledge exchange, knowledge mobilisation, knowledge translation, translational research; and (e) social sciences, humanities. This systematic search was carried out in July 2020 and resulted in 3422 references (see Figure 1) after removal of duplicates.
Figure 1

PRISMA flow chart for describing screening of papers. This figure is a visual representation in flow chart form that describes how many papers were excluded at each step of the meta-narrative review screening by the authors. It is based on Moher et al.’s PRISMA flow chart for systematic reviews and meta-analysis.
In the second phase, these references were comprehensively assessed, working with several inclusion and exclusion criteria (e.g., studies that did not involve SSH researchers or non-academic stakeholders were excluded). Only papers that included qualitative research data on the perceived meaning of collaborative interactions in relation to research impact were incorporated. Reviews and opinion pieces were excluded. Using these criteria, the titles were evaluated first, then the remaining references’ abstracts, etc. This process resulted in seven studies.

To further extend and complement our initial search, we conducted backward reference chaining to trace publications on collaborative interactions through investigating the reference lists from the seven identified studies. Exploring a total of 296 references led to identifying five potentially relevant publications that were identified as ‘grey literature’ (i.e. manuscripts outside of the traditional academic publishing and distribution channels). One of these studies was excluded because qualitative data were used only to supplement survey responses and were poorly integrated in the results section (Turpin et al., 1999). A second study was solely based on survey data and therefore excluded (Hughes & Kitson, 2009). A third report was excluded because it did not use any qualitative data (HM Treasury, 2003). Finally, the other two references referred to the same research report (Hughes, Kitson, Probert, Bullock, & Milner, 2011), which appropriately used qualitative data and therefore was included in this study. Through reference chaining we also identified four relevant review studies whose results were integrated into this manuscript (Cvitanovic et al., 2015; Fazey et al., 2012; Fazey et al., 2014; Israel, Schultz, Parker, & Baker, 1998). Ultimately, we thus selected eight studies for further analysis (see Table 1 for study characteristics).
Table 1.

Characteristics of Included Studies in the Review.

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<tbody>
<tr>
<td>Sample</td>
<td>54</td>
<td>44</td>
<td>28</td>
<td>31</td>
<td>23 (14 researchers and 9 stakeholders)</td>
<td>24</td>
<td>9</td>
<td>76</td>
</tr>
<tr>
<td>Data collection</td>
<td>In-depth interviews</td>
<td>Semi-structured interviews</td>
<td>In-depth interviews</td>
<td>Interviews</td>
<td>In-depth interviews</td>
<td>Semi-structured interviews and one focus group</td>
<td>Interviews</td>
<td>Interviews</td>
</tr>
<tr>
<td>Field</td>
<td>Social sciences-industry collaborations</td>
<td>Arts and humanities and regional creative economies</td>
<td>Research utilisation and local National Health Service policy making</td>
<td>Social scientists influencing environmental policy</td>
<td>Tracing ‘productive interactions’ to identify social impacts from social sciences</td>
<td>Collaboration between SSH research groups and non-academic partners</td>
<td>Collective experiences of a multidisciplinary, intersectoral committee</td>
<td>Collaboration between arts and humanities and the private, public and third sectors</td>
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The study process involved (see Toye et al., 2014): 1) an in-depth analysis of the publications (extracting the data, reading and rereading the articles); 2) determining how the studies are related (deciphering concepts from description and assigning specific codes to them); 3) developing conceptual constructs through grouping and regrouping the codes; 4) synthesising translations (challenging interpretations through a discussion of the coding process amongst peer researchers); and 5) expressing the synthesis through writing up a coherent and consistent results section that optimally captures the data and insights from the eight studies. These different phases parallel a process in which researchers evolve from first-order constructs (the participants’ ‘common sense’ interpretations in their own words, cited in the studies) to second-order constructs (the authors’ interpretations based on first-order constructs) and eventually to third-order constructs (the researchers’ interpretations of the original authors’ interpretations). Since first- and second-order constructs were not always distinguishable, we combined these during the interpretative process. For all involved studies, we identified 122 first-/second-order constructs (textual units, paragraphs or quotes that could be distinguished from one another ‘content-wise’ to allow further coding). All first-/second-order constructs were coded (one construct could be assigned several codes) to identify specific topics within the data. This led to identifying 277 codes across all studies. Further grouping and regrouping of the codes eventually led to identifying three overarching third-order constructs that we elaborate in the results section below. Table 2 shows the number of identified first-/second-order constructs for each study, whether first-/second-order constructs offer support for conceptual third-order constructs, and an example of a unique contribution of a study to a third-order construct. To validate the results, a session was held during which the main findings were fed back to all co-authors as well as to two external experts (one research impact policy officer and one expert in co-creative processes).
Table 2. Overview of Identified First/Second Order Constructs and Contribution of a Study to Third Order Constructs.

<table>
<thead>
<tr>
<th>Study</th>
<th>Number of identified first/second order constructs</th>
<th>Support for conceptual third order construct (number of first/second order constructs that offer support)</th>
<th>Example of unique contribution of a study to a third order construct</th>
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<tbody>
<tr>
<td></td>
<td>Organisational context</td>
<td>Incentives</td>
<td>Brokers</td>
</tr>
<tr>
<td>1. Governance of Good Community by Gokiert et al. (2017)</td>
<td>24</td>
<td>No</td>
<td>Yes (9)</td>
</tr>
<tr>
<td>2. Academic-industry collaborations by Cherney (2013)</td>
<td>9</td>
<td>Yes (2)</td>
<td>Yes (2)</td>
</tr>
<tr>
<td>3. Guidance to influence environmental policy (Marschall et al., 2017)</td>
<td>10</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Study</td>
<td>Score</td>
<td>Yes (1)</td>
<td>Yes (3)</td>
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<td>----------------------------------------------------------------------</td>
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<td>---------</td>
</tr>
<tr>
<td>4. The role of universities in Regional Creative Economies by Comunian et al. (2015)</td>
<td>10</td>
<td>Yes (3)</td>
<td>Yes (1)</td>
</tr>
<tr>
<td>The study refers to multiplex relationships: A rapid expansion and diversification of collaborative interactions that also bring specific tensions (such as conflict with an academic identity). It shows that the nature of the interactions is heavily mediated by system and institutional realities as well as disciplinary cultures.</td>
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<td>5. Informal collaborations by Olmos-Peñuela et al. (2014)</td>
<td>10</td>
<td>Yes (1)</td>
<td>Yes (3)</td>
</tr>
<tr>
<td>The study stresses the fact that assessments are often based exclusively on activities that can be audited and that informal collaborations are not taken into account which then acts as a disincentive. Some researchers might try to avoid them.</td>
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<td></td>
<td></td>
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<tr>
<td>6. Productive interactions by Molas-Gallart &amp; Tang (2011)</td>
<td>18</td>
<td>No</td>
<td>Yes (4)</td>
</tr>
<tr>
<td>Finding a common language (such as talking in terms of productive interactions) provides a level of positive reinforcement which is helpful in encouraging researchers and thus legitimizes the engagement with users even if it does not feel like ‘proper’ academic work.</td>
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<tr>
<td>7. Policy makers using evidence by Elliot &amp; Popay (2017)</td>
<td>14</td>
<td>Yes (3)</td>
<td>Yes (5)</td>
</tr>
<tr>
<td>The study refers to the acknowledgment by stakeholders of the importance of research on the one hand yet also being dictated by corporate and financial priorities on the other hand.</td>
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<td></td>
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<tr>
<td>8. Hughes et al. (2011)</td>
<td>27</td>
<td>Yes (1)</td>
<td>Yes (13)</td>
</tr>
<tr>
<td>The study provides support for the fact that academia as well as non-academic partners bring in legitimacy. For example, the input from an industrial partner gives credence to an academic course.</td>
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</table>
RESULTS

The resulting sample of studies spans a broad array of disciplines, as it includes sociology, science communication, research evaluation, research policy, (creative) economics, community health, and public policy. It consists of studies conducted in Austria, Canada, Spain, the United Kingdom, and Australia. The process of data analysis led to identifying three common third-order constructs across studies: 1) the perceived role of the wider organisational context; 2) perceived (dis)incentives and (dis)advantages in interpersonal collaborative interactions; and 3) the potentially important role of mediating staff, brokers and champions. We will systematically discuss each one of these constructs.

The Wider Organisational Context

Five out of the eight studies refer to diverse terminology associated with the importance of organisational characteristics as well as a wider political context. Quotes from participants clarify that the organisation to which one belongs sets out a specific focus (e.g. rather process-oriented in academia versus outcome-oriented in industry) and working modes with which staff can identify: “There has always been a difficulty with academics trying to talk to industry. Industry doesn’t really respect academia because they haven’t really done anything [...] that deserves respect. I know that if I’m talking to people I can say ‘I have done this with producers, we’ve sent it to market’ and they immediately go ‘then you understand what it’s like, you’re operating in our world and you understand our world.” (Hughes et al., 2011: p. 16). When goals between organisations conflict, this creates a tension that is potentially further complicated or facilitated by the evolving nature of organisations. Organisational goals create motivations for their members that might either align throughout time or drift away from each other. For example, Cherney (2013) states that the motivations (of stakeholders) to become involved in research cannot be separated from its potential
perceived usefulness to the organisational agenda. Comunian and colleagues (2015) write that the nature of the stakeholder-researcher interactions is heavily mediated by system and institutional realities as well as disciplinary cultures. These authors refer to what they call “multiplex collaborative relationships” that are under rapid expansion and diversification, but which at the same time are threatened since they are perceived as sometimes incompatible with an academic identity and achieving academic impact. From that perspective, investing in external activities could even backfire, as is illustrated by the following quote from a researcher: “Well I mean I think probably in career terms it didn’t do me any good at all.” (Comunian et al., 2015: p. 2468). Also, organisational imperatives and contingencies such as timing and day-to-day priorities might get in the way: “You’ve got to insert yourself into their schedules and reacquaint them with your agendas, because they’re not at the forefront of their daily work” (Cherney, 2013: p. 1013).

Comparable tensions are in place for stakeholders outside academia for whom it is not straightforward to use evidence-based knowledge: “You’ve got to take your purchasing decisions on the best information and research you can get. But in the end they’re dictated by corporate priorities, financial priorities and hopefully informed by that kind of independent viewpoint on what you knew” (Elliot & Popay, 2017: p. 465). Policy directives might steer expectations and even lead to misunderstandings in how the collaborative interactions are framed, as illustrated by this researcher’s quote: “But in fact, part of the museum defined what we were doing as a cultural diversity project, so they essentially turned the research in their minds into an educational outreach project and of course assumed that our intention was to convert these […] non art lovers into art lovers. But that was the furthest from our intention!” (Hughes et al., 2011: p. 49). Financial considerations, organisational politics, or lobbying by other interest groups might bring about a feeling that stakeholder consultation does not fulfil one’s expectations: “everybody … has been consulted 50 million times about everything, and
they’re sick to death of being consulted and very often feeling that even though they’ve been consulted, they haven’t necessarily got what they wanted” (Elliot & Popay, 2017: p. 466). However, the opposite can also happen; sometimes motivations align surprisingly well: “… The researchers helped the neighbourhood to deal with the variety of problems caused by having an ‘undesired’ heritage like a large abandoned prison in their midst. The researchers benefitted by obtaining access to a study case” (Olmos-Peñuela et al., 2014: 501). Finding the right ‘fit’ between organisations is thus essential in tackling asymmetries between organisations.

Collaborative processes are to a certain extent perceived as unpredictable, since they depend on the dynamic characteristics of complex living systems: “I mean so much is to do with contingency. You know so much of it’s to do with the surrounding situation at the time” (Elliot & Popay, 2017: 465). Also, the short-term nature of research work and high staff turnover might hamper long-term collaboration (Cherney, 2013; Elliot & Popay, 2017). The wider organisational context thus operates as a framework within which people are either discouraged or motivated to undertake certain actions depending on the institutional aims or goals (e.g. more process- vs. outcome-oriented, focused on understanding vs. achieving policy-oriented aims) and the evolution of particular institutions as complex systems. These motivations enable or disable collaboration with partners outside one’s own organisation, which is reflected in the following construct.

**Perceived (Dis)incentives and (Dis)advantages in Interpersonal Collaborative Interactions**

Seven out of the eight studies included in this meta-ethnography elaborate on what participants perceive as benefits, (dis)incentives, and (dis)advantages of engaging in interpersonal collaborative interactions. One quote from someone in the private sector
perfectly illustrates how these perceived benefits are closely associated with organisational characteristics: “I felt there was a huge discrepancy between what academia does and what we do outside in industry, in terms of speed, how we turn around projects in industry, and how much closer we are to reality and to actual needs, whereas in the universities it’s all very theoretical and there seems to be a fear of actually going outside the institution to approach people to get a better picture. ... For us as the industry partners I am not sure what we will gain from it…” (Hughes et al., 2011: p. 52). Furthermore, although informal relationships are deemed important for productive collaborative interactions to emerge, they are sometimes threatened by an economic logic. They can only be sustained when do not entail any substantial additional costs and when the ‘informal work’ that has to be done is covered by the ‘core’ research funding of other projects (Olmos-Peñuela et al., 2014). Views about stakeholder collaboration are sometimes tempered by resource considerations and a more pragmatic outlook (Comunian et al., 2015: p. 2469): “…we couldn’t make them [about imaginative ideas] sufficiently price competitive”. Also, current assessments are based exclusively on activities that can be audited. Therefore, informal collaborations are generally not taken into account or rewarded by research institutions, and are thus avoided by some researchers (Olmos-Peñuela et al., 2014). The urge to deliver a tangible output or deliverable is sometimes perceived as restraining. For example, a purchasing manager was initially reluctant to talk about a research initiative she had been involved in because “there are other areas where we’ve had a more demonstrable return ... At certain times [during the project], I was trying to speed it up or to tighten it so that it actually delivered something that was demonstrable and would lead to change in the way resources were used” (Elliot & Popay, 2017: 465). Being able to deliver such a demonstrable return is therefore sometimes perceived as the ultimate benefit of the collaboration between, in this case, a museum and a research organisation: “The designing of something that is almost like a physical artefact (i.e. a mobile
phone application), something that you can actually show people and use ... was the highlight for me. ... I know now that working with an organisation like the museum can actually get something like this to happen” (Hughes et al., 2011: p. 37).

Diverse factors that enable collaborative interpersonal interactions are mentioned. Improved cultural knowledge is one of them. In one study it was framed as: “There are gold nuggets in there for better understanding of their worldview” (Gokiert et al., 2017). Molas-Gallart & Tang (2011) refer to how one stakeholder told them how she is now engaging with academics “as never before”, having gained a better understanding of how to work with academics and realising the benefits of academic collaboration. Some partners understand impact as enhancing internal capacity that goes beyond the purely instrumental: the capacity-building of their worldview. Others describe the collaboration as a new dimension within which unusual and innovative things might happen and where distortion is allowed: “it is a terribly rich way to work ... a new space ... new sort of perspective ... where people’s viewpoints are challenged ... boundaries are being pushed” (Gokiert et al., 2017: p. 5). The authors of the aforementioned study argue that conversations can be difficult and uncomfortable when, for example, old wounds are reopened between different stakeholder groups. However, a certain amount of ‘distortion’ is often an important part of being able to develop opportunities for further growth between collaborative parties (Gokiert et al., 2017). Evidence that comes from the collaboration is often perceived as far more persuasive, credible, and legitimate. It is perceived as less biased and subject to criticism: “So we needed something [from researchers] that was above board and clearly credible” (Cherney, 2013: p. 1012). Legitimacy can be also be offered by non-academic partners: “Bringing in an external lecturer can add a slightly different approach, and it brings a lot more credence to the project if you have got someone coming in from the industry” Hughes et al. (2011): p. 33).

Furthermore, developing a language that enforces these collaborations might help as well.
Molas-Gallart & Tang (2011: p. 224) state that “the notion of ‘productive interactions’ helped researchers to positively frame and therefore reinforce stakeholder collaboration. It provides a legitimization of the strategy of getting out and meeting stakeholders, networking and attending/presenting at meetings — which we all know is important in terms of creating research opportunities, yet can often feel not quite like ‘proper’ academic work”. To conclude, an effective collaborative dimension should allow the development of informal interactions to increase mutual understanding, to construct a common ‘empowering’ language as well as creating a bond between partners that is perceived as credible and legitimate. Several accounts underpin the idea that bringing about such a fertile context could be facilitated by mediating staff, brokers, or organisational champions.

The Perceived Role of Mediating Staff, Brokers, and Champions

Seven out of the eight studies included in this meta-ethnography support the perceived importance of staff who might build bridges and facilitate collaboration between individuals from different institutes and associations. Different names for this type of staff include ‘brokers’, ‘change agents’, ‘interpreters’, ‘interface negotiators’, and ‘champions’. The latter is reflected in the idea that some partners have strong values and a lot of energy to commit to a shared goal. They have authority and are acknowledged as such by the group members: “…there are some real champions, … who have been at every single meeting. …you need to have a champion who’s driven by the need to have respectful research done in their community that ties in with helping them in measuring what the goals of their community are” (Gokiert et al., 2017: p. 6). Also, in collaborative processes it is important to manage conflicts or uncomfortable and difficult situations, especially when touching on specific ‘wounds’: “We may not always agree on what is said. But we had that respect with one another so strongly that if we were uncomfortable with anything that was written [in a manuscript], that was respected and taken out” (Gokiert et al., 2017: p. 9).
A broker should be able to handle a collaborative process that is characterised as iterative. For example, in Cherney’s study (2013) the author indicates that in order for a collaboration to be a two-way process, participants need to be willing to vary their level of control over different stages of the research process. Therefore, partner involvement tends to shift throughout the project. A facilitator has to be able to accept that such processes are relatively fluid: they go back and forth with sometimes unpredictable outcomes. Also, they have to be able to take some distance from a narrow academic perspective (Hughes et al., 2011). Relevant statements included: “... it was not just an academic exercise ... not just a bunch of academics thinking about it theoretically. ... they were not hung up on the theoretical” (Cherney, 2013: p. 1011), and, “I’ve become much more humble as a researcher” (Gokiert et al., 2017: p. 9).

Change agents need to understand the rationale and justification of the research collaboration (Cherney, 2013). The study by Marshall and colleagues (2017) referred to influencing decision-making in collaborative processes as an art. The process by which policymakers osmotically assimilate scientific information requires a continuous and trustful relationship. Communicating well (i.e., in a way that is compelling, clear, and authoritative) is a necessity. Brokering should be considered but it is a distinct specialisation that requires time, funding, and training. They should be practical, hands-on, and provide insights into the social dimension. Taking a pro-active stance is also important: researchers should identify where opportunities might emerge and respond quickly when needed (Marshall et al., 2017). However, as bridges between collaborating parties are lacking, it might be difficult to take on the role of the other by taking on the priorities, values, and ways of working of stakeholders: “... there aren’t any meeting places. And so there are ... word of mouth ... exchanges that take place ... Brokerage might be the key” (Comunian et al., 2015: p. 2470).

Facilitating a consensus through brokers is illustrated in the study by Molas-Gallart
and Tang (2011: p. 222): “The research played a mediating role between opposing groups, yielding identifiable results. Activists now accept open-pit mining ... Mining companies have accepted that there are areas unsuitable for exploration.” Participants in the study by Elliot and Popay (2017) stressed the potentially beneficial neutral position of researchers, who could act as an interface or be perceived as “knowledgeable outsiders”. Researchers could clarify and contribute to decision-making but should not provide answers: “It’s having someone who is external from all the organizations, with no vested interest and no reason to placate or irritate that I think is quite useful” (Elliot & Popay, 2017: p. 466). Occupying this neutral position also aligns with the idea of fuzzy stakeholder boundaries, in which there is a perceived fluidity in the roles of academic and ‘stakeholder’ communities (Molas-Gallart and Tang, 2011). Finally, effective brokers use language as a tool to establish this fluidity in shifting roles through a shared way of looking at things (Elliot & Popay, 2017).

To conclude, these results show how the wider organisational context creates a framework within which individuals are pushed from or pulled towards collaborative interactions. Organisational asymmetries (e.g. discrepancies in goals and political agendas), economic costs associated with the collaboration, as well as strictly assessing activities in terms of demonstrable outputs, have all been perceived as push factors. Perceived pull factors included increased knowledge and capacity-building (both instrumental and non-instrumental outcomes), the legitimacy that follows from working with reputable institutes, and the intrinsic motivation associated with doing something ‘interesting’ for the greater good. Facilitators or brokers potentially play an important role in creating a context in which all parties perceive benefits. Specific communication, a hands-on mentality, and using a language that both empowers collaboration partners and gives them a tool to arrive towards a shared understanding of a specific phenomenon or problem all might be key for successful collaborative interactions to achieve positive impact. An additional advantage of these brokers
might be that they are perceived as neutral “knowledgeable outsiders” who are therefore very adept in steering the development of continuous and trustful relationships amongst partners. Since collaborative processes are recognised as iterative, the training of brokers should include knowledge on how to work with unpredictable outcomes and partners who have varying levels of engagement throughout time.

**DISCUSSION**

Up until now, no systematic review existed which brought together qualitative data on how stakeholders understand collaborative interactions in relation to research impact. This is especially relevant for several reasons. Firstly, there is a lack of understanding on how exactly these processes work. This remains a difficult task, since research is always embedded in dynamic networks that involve two-way processes between research policy and practice (Pedersen et al., 2020). However, complex does not mean impossible. Recent studies have shown that systematically planning and evaluating research impact pathways can lead to positive outcomes in diverse fields, from studying efficient use of land and water in marginalised farming families (Christen, Mitchell, Roth & Rowley, 2019) to preventing intimate partner violence (Spangaro, Koziol-McLain, Rutherford & Zwi, 2020). Processes connecting research and impacts can be understood sufficiently to influence them in ways that enhance the likelihood of these impacts (Meagher, Lyall, & Nutley, 2008). Secondly, existing theoretical frameworks on collaborative interactions that use qualitative evidence (e.g. Oancea, et al., 2017) should be further fine-tuned and enriched through an inductive approach that brings in diverse individual experiences and understandings. The current study extends the knowledge on collaborative interactions, which might be useful in achieving positive research impact through improved understanding of collaborative interactions. Thirdly, there is an urgent need to find working models that help stakeholders solve societal problems. Although theories of change are often used as roadmaps to guide participants, it may be
difficult to determine expected changes at the planning phase in highly innovative and explorative projects (Pedersen et al., 2020). Morton (2015) also stresses that the potential uses of research often cannot be anticipated, but that it is rather “a process of emergence” (2015: p. 53). The results of this study at least partly address the lack of understanding of collaborative processes, fine-tune existing concepts and integrate them into a comprehensive theoretical model, and might inspire innovative ways to solve societal problems. In this discussion we will reflect on a model (see figure 2) that describes successful knowledge diffusion amongst stakeholders. Collaborative relationships usually occur in a multiplex environment where stakeholders’ ideas and knowledge are not well aligned due to organisational asymmetries. Effective brokers succeed in bringing stakeholders into a new dimension where distortion and conflict is allowed yet creativity and mutual understanding eventually leads to knowledge diffusion and to solving a complex challenge.
Figure 2

Visual representation of the process of knowledge diffusion in a multiplex collaborative environment.
Enabling Multiplex Collaborative Relationships

Collaborative interactions are characterised by a direct or mediated flow of information that is (rather) uni- or bi-directional and with strong or weak involvement of diverse stakeholders. This study shows that these characteristics are associated with perceived advantages and disadvantages, the potentially important role of knowledge brokers, and the wider organisational context. The latter determines to a certain extent whether multiplex collaborative relationships (i.e., an expansion and diversification of collaborative relationships between institutions, departments, and individuals within public or private sectors) produce desired outcomes. For example, are researchers allowed to spend time on activities that are not directly associated with quantifiable academic output? The extent to which an organisation sets specific process- or outcome-oriented goals for their staff or acts upon specific political agendas determines the types of relationships that emerge within and outside the work environment. Positive societal impact capacity (the ability to realise benefits to society based on research) is thus not only a question of individual skills, but also depends on the conditions that are provided by the context in which individuals are embedded and operate (de Jong & Muhonen, 2020). A qualitative study of benefits and challenges in collaborative science showed that the academic context hinders collaboration, particularly in reference to tenure and promotion criteria that are applied to early career researchers (DeHart, 2017). In order to overcome limiting contextual characteristics, Phipps and Shapson (2009) have suggested creating university-based knowledge mobilisation units with an institution-wide mandate to support research-based partnerships outside of the current economic impact paradigms of technology commercialisation and industry liaison. Our study shows that allowing a certain amount of loss of control over the research process and partner involvement might be an essential characteristic of enabling collaborative interactions that are
partly determined by day-to-day realities and contingencies. It is important to minimise or bridge organisational asymmetries in order to facilitate positive outcomes based on collaborative interactions.

This meta-ethnography shows that the economic dimension might play an important role. This was previously stressed by researchers who argue that the funding of uptake and implementation activities within partner organisations is needed to make research easily available, as well as to enhance researchers’ skills in working with partners outside academia (Phipps, Cummings, Pepler, Craig & Cardinal, 2016). Our findings point out that organisations and funders should create working conditions in which informal relationships are allowed and to a certain extent stimulated, since these relationships might have an important role in bridging organisational or interpersonal asymmetries. The focus of research evaluators who only accept demonstrable outputs might be counterproductive, since there is often a perceived need amongst stakeholders to go beyond the purely instrumental. Studies often produce less tangible conceptual impacts that contribute to a changed awareness regarding particular issues (Meagher et al., 2008). That being said, for researchers working within SSH, working towards a tangible output (such as a smartphone application) can also be perceived as particularly rewarding. To improve research evaluation, performance feedback and rewards should be awarded to a group rather than to an individual in order to develop shared mental models that contribute to desired outcomes (Druskat & Pescosolido, 2002). Funders should therefore take into account some degree of freedom related to the extent to which researchers keep control over the research process, acknowledge the importance of informal relationships in collaborative interactions, and accept outputs that are tangible as well as those that are intangible.

**Knowledge Diffusion through Effective Brokers**

Some participants described positive collaborative interactions as entering a new
dimension where distortion is allowed, the collaborating partner is perceived as bringing in legitimacy, outcomes are valuable (a win-win situation), and a common language has been developed. These interactions then lead to what one participant called ‘gold nuggets’, i.e., an in-depth cultural understanding of a community. The latter taps into the idea of educative authenticity, which was originally defined by Lincoln and Guba (1986) as the extent to which individuals have become more understanding of the constructions of others. This process of ‘co-learning’ is an important key principle in community-based research, where reciprocal transfer of knowledge, skills, capacity, and power is perceived as pivotal to achieving a positive impact (Israel, Schultz, Parker, & Baker, 1998). Johnson and Rasulova (2017) argue that there is a frequent deficit of a more transformative orientation that takes stakeholder interaction and negotiation in impact evaluation into account. Moreover, contemporary impact evaluation practices seem to go against a more qualitative and theoretically driven methodology and do not accurately represent the experience either of the academic research endeavour or of impact as it may be more broadly construed (Laing, Mazzoli Smith, & Todd, 2018). One of the key elements in successful knowledge exchange could be to involve stakeholders in the process of designing and implementing evaluations, and in doing so to enable a deeper learning experience (Fazey et al., 2014). To successfully develop collaborative interactions that tackle complex societal challenges, we thus might need a wind of change that focuses on profound learning experiences as well as working together through action and advocacy. Mediating staff such as knowledge brokers and impact champions can play an important role in this process.

In response to the need for innovative and collaborative approaches to knowledge exchange, several novel approaches have been identified and developed. These include: 1) the involvement of stakeholders in scientific research programs throughout every aspect of the study including design, implementation and analysis (i.e. co-production); 2) embedding
scientists in decision-making agencies; 3) actions as developed by boundary organisations (not embedded within research teams but established as a separate entity); and finally 4) knowledge brokers. The latter are typically embedded within research teams or institutions and develop relationships and networks with, among, and between producers and users of knowledge (Cvitanovic et al., 2015). In this study knowledge brokers and impact champions were perceived by participants as those individuals who have strong values, great energy, bring people together around a shared goal, are able to negotiate difficulties and conflicts, and have a proactive attitude (they seize opportunities). Previous studies have shown that for innovative and transformative processes to lead to positive outcomes, three conditions are important: building a strong community amongst partners; leadership (e.g., aligning change with organisational values); and building capacity and skills (Yee & White, 2016). One of these positive outcomes is knowledge transfer. Based on the qualitative data from the studies in this meta-ethnography, we prefer using the concept of knowledge diffusion (all partners absorb the co-produced knowledge that flows bi-directionally) as opposed to osmotic knowledge assimilation since osmosis entails a physical barrier and assimilation refers to a one-way process. Ideally, knowledge diffusion is achieved when brokers are able to manage a process that is iterative rather than linear, bi-directional, and with fluid rather than strictly delineated boundaries between stakeholders. During the process a certain loss of control is allowed and perceived as normal. Preferably brokers are perceived as knowledgeable outsiders who are able to take on the role of the other and are therefore able to reach consensus relatively easily. This new knowledge, combined with what we already know about the potential roles and skills of knowledge brokers (see, e.g., Phipps & Morton, 2013), could easily feed into training programs that aim to facilitate knowledge mobilisation.

**Future Outlook, Limitations and Conclusion**

This study on the perceived meaning of collaborative interactions in relation to
research impact drew on more than 3000 published studies of which titles and abstracts, and in a later phase the full text, were analysed. We were quite surprised to find so few studies that actually address this fairly straightforward topic. Moreover, the selected articles, which were all qualitative in nature, differ from each other in several important respects. Firstly, although they all focus on collaborative interactions, their specific focus and conceptualisation is quite different. Gokiert et al. (2017) and Hughes et al. (2011) offer a qualitatively rich analysis with extensive descriptions, while Cherney (2015) offers fewer but relatively long quotes on academic-industry collaborations. Secondly, three studies offer a summary of qualitative data with little or even no direct access to verbatim quotes (Marshall et al., 2017; Molas-Gallart & Puay Tang; 2011; Olmos-Peñuela et al., 2014), leaving little space for theoretical concepts to unfold. From a methodological point of view, ethnographic field studies, currently lacking in this study, could also offer important insights. This clearly shows that a large study field in qualitative research is still left open and that inductive research on a larger scale is warranted to remove gaps in both theoretical and more applied knowledge. A session held to validate the results from this meta-ethnography showed some limitations, such as the fact that we excluded a whole body of ‘grey literature’ and experts by experience. Although working through Web of Science and ProQuest is mainly aimed at ensuring the quality of the included studies, it also shows how academia creates its own barriers and exclusion mechanisms. Also, the important role of societal values in relation to what are deemed important research and beneficial research outcomes is now largely left out of this discussion. The task to further develop an interdisciplinary conceptual framework on collaborative interactions is therefore still incomplete and should in the future address how interpretations on key concepts such a “communities” and “knowledge” diverge.

However, data from the selected eight qualitative studies (based on 289 group or individual interviews) led to important reflections regarding collaborative interactions:
multiplex collaborative relationships are perceived to be hindered by the asymmetry between the organisational contexts to which various partners belong. The role of bridging figures (brokers) can be essential in drawing diverse stakeholders out of these contexts into a new dimension that allows creativity and mutual understanding but also allows conflict and distortion. In ideal circumstances, this leads to a quasi-automatic transfer of knowledge between partners that takes place naturally and in both directions (knowledge diffusion).
REFERENCES


