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Researchers' online visibility

Tensions of visibility, trust and reputation

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Researchers' online visibility: Tensions of visibility, trust and reputation.

Abstract:
Purpose – The purpose of this article is to understand what role researchers assign to online representations on the new digital communication sites that have emerged, such as Academia, ResearchGate or Mendeley. How are researchers' online presentations created, managed, accessed and, more generally, viewed by academic researchers themselves? And how are expectations of the academic reward system navigated and re-shaped in response to the possibilities afforded by social media and other digital tools?
Design/methodology/approach – Focus groups have been used for empirical investigation to learn about the role online representation is assigned by the concerned researchers.
Findings – The study shows that traditional scholarly communication documents are what also scaffolds trust and builds reputation in the new setting. In this sense, the new social network sites reinforce rather than challenge the importance of formal publications.
Originality/value – An understanding of the different ways in which researchers fathom the complex connection between reputation and trust in relation to online visibility as a measure of, or at least an attempt at, publicity (either within academia or outside it) is essential. This article emphasizes the need to tell different stories by exploring how researchers understand their own practices and reasons for them.

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Introduction

Increasingly, academic work and what it means to be an academic researcher is couched in terms of accountability, output, impact as well as entrepreneurship as derived from New Public Management approaches to university governance (Vostal, 2016; Whitley, Gläser, & Engwall, 2010). Concurrently, digital communication has emerged as central in academia and has a role in transforming scholarship (Weller, 2011). Most importantly, social network sites for researchers, such as Academia, ResearchGate or Mendeley, as well as blogs and general purpose social media, such as Facebook, Twitter, or even LinkedIn, have made their entrance into academic work (Kjellberg, Haider, & Sundin, 2016). These services have come to complement other online forums, not least, the personal webpage at an institution's website and the institutional repositories for publications (Hammarfelt, de Rijcke, & Rushforth, 2016; Thoms & Thelwall, 2005). The academic versions of social network sites are similar in their architecture to those of other, more general, social media that are based on the connectivity and narratives of the user (Van Dijck, 2013).

These networked services for online communication are also highlighted as opening up new ways of engaging with the public, networking with peers and as ways for measuring impact, including societal impact, in addition to traditional bibliometrics (Priem, 2013; Wouters & Costas, 2012). Social media and other forms of representation

on online forums are seen as ways to operationalize demands for openness and public engagement, which are increasingly being requested (Carrigan, 2016). This tallies well with emerging notions of an entrepreneurial self (Bröckling, 2007), where the academic researcher is seen to brand and offer herself on an academic market, where she competes for rewards– in the form of visibility, attention and resources. Such an understanding of the role of social media, in regard to the academic reward system, has started to gain traction amongst researchers (Williams & Woodacre, 2016). This is often put in relation to demands by university administration and funders (Nicholson, 2015; Quinn, 2015), as well as to business models of the commercial platforms for research networking and paper sharing (Duffey & Pooley, 2017) along with self-monitoring and quantification of one's own performance (Hammarfelt et.al. 2016).

This provides the conceptual framework for our study, where we approach researchers in order to understand what role online representation is assigned by the concerned researchers. How are researchers' online presentations created, managed, accessed and, more generally, viewed by academic researchers, themselves? These questions guide our study of how expectations of being visible online are articulated as part of what it means to be a researcher.

The new permanence of informal scholarly communication

Whereas the boundary between informal and formal scholarly communication has never been absolute (Fry, 2006), in recent years this blurriness has gained a new quality that has further changed their relationship (Kjellberg, 2014). Concurrently, science communication, i.e. communication that is not carried out within the academic community, but is part of public engagement and industry-relation activities, is developing into a more noticeable aspect of scholarly practice (Chikoore, Probets, Fry, & Creaser, 2016). Often, what is stated in these arenas, on what it means to be a researcher, tends to be quite normative and reproduce, as well as fortify, stereotypical images of success in academia (Felt & Fochler, 2013).

Moreover, as new indicators are being developed for ever increasing areas of academic work (Miedema et. al., 2018), the blurriness between different types of so-called research output becomes a problem in ways that have gone unnoticed before. Formal communication is typically taken to mean written and vetted documents that are easy to store and retrieve, and also map and measure. Here, is where the scholarly journal article, published conference paper, book chapter or monograph belong. In contrast, informal communication is traditionally portrayed as less official, not vetted in a strict sense and is couched in terms like grey literature or as oral communication (Meadows, 1998). Today, demand is increasing for scholars to not only engage in outreach activities and communicate with the public or relevant stakeholders outside academia, but also to make these activities visible. This involves, for instance, industry relations, participating in public debates or expressing views, or being mentioned in the media, on blogs or on social network sites. Informal communication and science communication have long been considered more ephemeral, less controlled and less controllable. However, with the emergence of new venues and formats, such as pre-print archives, mailing lists, blogs, and social network sites, it has become possible and easier to archive, access and trace this type of communication.

Hence, what is new, in the current situation, is that engaging in science communication is advanced as being more visibly significant for individual researchers and that traces

and documents of informal scholarly communication have become less ephemeral; that is, they are often recorded, archived and findable on the various websites, in mailing list archives, on social network sites and used for community building or outreach activities. This opens up new ways for subjecting them to the types of measurements that were previously reserved for formal literature, i.e. analyses akin to those in bibliometric studies. Along with the growth of blogs and the various network tools, both general purpose ones such as Facebook or Twitter and specifically academic ones such as ResearchGate, Academia.edu, or Mendeley, new metrics have emerged in order to calculate impact and visibility, or to map structures based on digital traces, such as links, likes, sharing or comments (Wouters & Costas, 2012). So far, the main focus of altmetrics is on tracing traditional outputs as mentioned in social media and tools for academic networking. Yet, new measurement indicators are being developed and discussed in terms of other scholarly products that can be created in research, e.g. code and software, images or methodologies (Niso, 2016; Didegah et al. 2018).

As Kling and McKim (1999, p. 905) argue, scholarly communication can be understood as "a communicative practice anchored in three dimensions: publicity, access, and trustworthiness". Scholarly communication is also about making oneself visible as a researcher, and not only the research results or publication (See also Cronin, 2005, p. 6). Clearly, online visibility is increasingly turning into something individual researchers have to consider (Duffy & Pooley, 2018) and this has implications for how trust and reputation, which are both central to understanding the academic reward system, are shaped. At the same time, Manca and Ranieri (2016) highlight that academic digital practices are varied and "motivations and associated practices" reflect "the diversity of the different conventions that characterize each academic discipline." In other words, the issues of trust and reputation have gained new currency in discussions on the changing academic landscape, refashioned by the pervasiveness of digital tools alongside demands for researchers' self-managed entrepreneurism and visibility, as well as a shifting of boundaries between formal scholarly communication, informal scholarly communication, and science communication.

Scholarly trust and reputation in the digital environment

In order to be able to know something, we have to trust others (e.g. Hardwig, 1991), or in the words of Shapin (1994, p. xxv) we have to recognise that "knowledge is a collective good". Often, this trust has to be mediated through institutions and now, increasingly through technologies and tools (Simon, 2010). For a long time, scholarly publications have held a central position in how trust in science and other forms of academic knowledge production is established and maintained (Haider & Åström, 2016). This is mediated through various proxies relating to different dimensions of trust in scholarly communication, such as peer review, editorial control, certain ways of formatting and indexing, and not least, the personal network; and through this, knowledge of the individuals and institutions involved in the processes (Francke, 2008; Haider & Åström, 2016). Davenport and Cronin (2000) introduce the notion of epistemological trust, drawing on Knorr-Cetina's (1999) concept of epistemic cultures. In a situation where the research community is often spread around the globe and we do not have personal knowledge of all active researchers in our field, we instead trust the community's endorsement by, for example, citations of an authored text (Davenport & Cronin, 2000), and increasingly by considering how a researcher is represented in the various available online arenas. In a quite recent study (Nicholas et al., 2014) on

how researchers trust various forms of digital scholarly information, social media were seen to play only a minor role. This might, of course, change as they become more widely used, yet interestingly, when social media were considered, they were mainly seen as relevant for promoting one's work, which was otherwise published or presented in traditional formats, to ultimately to increase citations. Inversely, social media content was predominantly trusted when linked to a traditional, formal publication (Nicholas et al., 2014, p. 128-129). Clearly trust and reputation are built in tandem, as both are used to calibrate what should count as quality. Specifically, reputation is considered as a proxy for establishing quality and through this, trust (Nicholas et al., 2014, p. 124). These are interesting findings on the relation between trust and reputation in contemporary academia and the role of social network sites and social media in these relationships. We will return to these, in more depth, in the context of our own discussion.

The centrality of reputation as the "main currency for the academic", as Becher (1989) famously notes, and its tight connection to career building has important implications for how academics structure their engagement within the scholarly communication system. It is, thus, intimately connected to the system of formal and informal scholarly communication and varies across intellectual fields and disciplines (Whitley, 2000). Prior to the emergence of dedicated social networks for academics, it has been shown how various digital resources and networks that exist are implicated in these processes of reputation building and other ways of organizing scientific fields (e.g. Fry, 2006; Fry & Talja, 2007). As the competitiveness of the so-called reward system in science seems to turn visibility into a key feature for advancement (Cronin, 2005), there is an assumption that new online tools for networking and reaching out will have implications for how reputation is achieved and managed (Hammarfelt, de Rijcke, Rushforth, 2016).

Not least, the network effect of these tools is expected to have implications for how reputation is built across distributed online communities convening around shared research interests and possibly facilitating collaborations (Weller, 2011, p. 47 and p. 61). Yet, as a large-scale survey of European researchers shows, traditional activities such as that of a journal article published in a reputed journal, participating in conferences, sitting on editorial boards, peer reviewing or even teaching and so on are still considered far more significant for a researcher's reputation than are blogging or use of SNS (Jamali, Nicholas, & Herman, 2015; Tenopir et al., 2015).

Having said that, the use of these services is increasing (Kramer & Bosman, 2016) and diversifying (Kjellberg et al., 2016.; Williams & Woodacre, 2016). Importantly, there are indications that their use will, in one way or another, be part of how researchers are judged and evaluated. Thus, an understanding of the different ways in which researchers fathom the complex connection between reputation and trust in relation to online visibility as a measure of or at least an attempt at publicity – either within academia or outside – is essential.

Method and materials

The study is focused on exploring how researchers understand their own practices and their reasoning regarding them. Focus groups were chosen for the empirical investigation as a method for obtaining the researchers' own way of describing and discussing their approach to their online presentations and how they create, manage,

access and more generally view it. This method is used to gain a better understanding of a certain topic by group discussions, where reflection is induced, created by the interactions of the participants (Morgan, 1997). The focus groups were semi-structured, and initiated by three topic areas that were introduced by the moderator. The first author conducted and moderated all focus groups. One important aspect of focus groups is the discussion and what happens in the interactions between the participants (Billinger, 2005; Wibeck, 2000). Thus, it is critical not to steer the conversation or intervene too much (Wiklund et al., 2014). Consequently, the moderator kept clarifying questions and other interventions to a minimum.

Five focus groups were conducted between October 2014 and April 2015. In total, 27 active academic researchers, 4-7 in each group, participated. The participants represented different disciplinary areas, genders and seniority levels. Variety was important in order to obtain the different perspectives and practices that were represented, but not necessarily to compare disciplinary differences. In total, five different disciplinary areas were covered: two groups from the humanities/social sciences, two groups from medicine (with different specialisations) and one group in the field of technology. This helped to contrast the discussions with each other. The focus groups lasted approximately one hour each and were conducted in Swedish (4) and in English (1). The study was carried out in Sweden. Swedish universities have a certain degree of autonomy and systematic quality assurance and assessment are – while mandatory – largely outsourced to local management. However, on a national level, distribution of research funding is at least partly based on certain bibliometric measures. Given that all researchers have to act in the international arena and, for example, publish in international peer-reviewed journals, present their work at international conferences and so on, the focus in the discussions was not on specific national or local conditions, but rather, on more overarching concerns.

All focus group conversations were recorded and fully transcribed. The transcriptions form the basis for the analysis, which was initiated by reading through the transcripts to establish similarities and differences. The focus groups always included an open-ended question that explored how the participants represent themselves online. Since the moderator did not ask questions about specific tools or services, the discussions, as they happened in the groups, controlled which ones were discussed. Still, the most dominant services – Facebook, LinkedIn, ResearchGate, Academia.edu, Twitter and Instagram – all appear in the material. However, the main focus was on how the participants reasoned and discussed these services in regard to presentation and self-presentation, rather than any technicalities of the tools, as such. After sifting through the transcripts several times, some recurrent themes emerged: crossing the boundary between personal and professional, embracing public engagement and dealing with disciplinary constraints, and finally, representation on networks and by publications. All transcripts were managed with software to facilitate re-reading and marking of the themes ("TAMS Analyzer," n.d.). These themes guided further analysis of how expectations of being visible online are articulated as part of what it means to be a researcher.

Findings and analysis

Three themes, each characterized by a tension, emerge as significant. The first theme reflected on the tension between personal and professional conduct and expectations. In the second theme, tensions that arise from engaging with the public while dealing

with disciplinary constraints were discussed, as the tension between outreach and disciplinary demands on researchers was highlighted. The third theme concerned the tension between different modes of communication activities and discussed the role of representation in networks versus representation through one's publications. The results are discussed along these themes and related to how different notions of trust and reputation emerge in relation to negotiations along these fault lines.

Crossing the boundary between personal and professional

The need to strike a balance between the private and the professional is frequently mentioned. Emblematic of the tension many participants experience between the private and the professional in online representation is Facebook. While many participants had Facebook profiles, none of the participants had public Facebook pages, not even for projects or research groups. In the focus groups, it is apparent that many consider the blending of different groups of friends, acquaintances, family and colleagues on Facebook as problematic. It affects how they act and use Facebook and also other similar services. As one participant expressed it:

> "I have Facebook, but I don't have it in my name or I have it in my old last name and I have like, if there is someone from work who wants to be friends, so then I don't want that sort of… now I never put things up there I just use it either to mail with some friends or as a spying tool" [FG 3].

In all of the focus groups, discussions took place on how to handle problems arising from the way in which Facebook collapses different audiences into the same network. Many deliberately avoid an interlinking of private and professional arenas, while others are less strict. In one of the discussions, the participants reflected on whether there might be a generational difference and one person commented: "It's hard and different between generations; how you use Facebook because it is hard to know what it's for" [FG 5]. This ambiguity is seen to lie in the service itself. Different concepts of when to use it have implications on how someone acts. Some quite consciously use Facebook as part of their professional communication, while others are sceptical. This has implications not only on who they can add as friends – for instance colleagues or people they have met at conferences – but also on decisions regarding ways and styles of communication:

> Researcher 1: While it may be quite...no, but, precisely these kinds of things, I can also imagine that you use it to show that you have a life beyond being a researcher. I'm not just some researcher sitting in a cave reading books. I also eat chilli, sort of…
> Researcher 2: But then I am on the opposite, I am not personal because
> Researcher 1: on Facebook
> Researcher 2: on Facebook
> Researcher 1: You must choose
> Researcher 2: Yes really, my most personal thing is that if you are told to congratulate, then I congratulate, but otherwise, no
> Researcher 1: You have to choose, you cannot do both [FG 1].

Decisions on who to add (to friend) and what to share are negotiated in relation to different understandings of the ways in which a service is considered meaningful. In the discussion above, the two researchers have chosen rather different approaches.

Researcher 2 is quite strict and uses Facebook only professionally, while Researcher 1 can see advantages in representing himself as a researcher, but still does not see it as the main purpose.

As researchers wanting to learn about other researchers, the participants were, in fact, interested in finding out more personal things. The kind of extra information that, for instance, lies in knowing that someone likes to eat chilli fruits, as mentioned above, together with added personal preferences, makes profiles appear more interesting, more relevant and contributes to how trust is established. This applies to social network services and institutional webpages, alike. Photos are particularly valued. In one focus group, a discussion arose about images and other kinds of added value that can be gained from having more than just publications on your institutional webpage. Yet it is also clear that it is not always easy to live up to this, oneself:

> Researcher 1: No, also images as I say, even if I haven't put up any pictures yet, because I was so unhappy with our official photos we had taken, so I have promised to take one myself.
> [laughs]
> Researcher 2: Yes, but you don't always practice what you preach [FG 4].

Similar considerations are relevant in relation to different platforms, for instance, in another discussion, talk turned to personal information, as it was included in a Wikipedia article about a researcher:

> Researcher 1: I read about NN on Wikipedia and it was actually fun because there it says he's a vegan and why he is a vegan and how he turned vegan and I thought that was pretty fun.
> Researcher 2: But he's kind of another level of researcher than us [...] I know that if you search for my name on Wikipedia you will get to a handball player and a politician from the liberal party who has been fired. It's difficult to get in above them [FG 5].

Many experience difficulties with finding relevant information on other researchers. If they exist at all, personal webpages can be out of date. The look of personal webpages and their content are important for how and if they are trusted. Once again, the right balance between personal and professional must be struck: "And then you want it to be professional. I have, on the other hand, never seen anything else; but, I would not want that it said that I am married and have two children and live in Santa Monica [...]" [FG 4]. Having said that, a webpage can also be disappointing if it appears too professional. This is, for instance, expressed in the following quote: "the webpage is actually also really quite important, like if the homepage is too flashy, it is almost negative" [FG 5].

Together, this points to the complexity of how trust is built through online representation and how delicate the connection between trust and reputation is. That is, while knowing about personal and even private preferences increases trust, some of our material also indicated the opposite – too much personal information decreased the professional impression and hence decreased trust. Then again, appearing professional also has its limits and giving the impression of being too streamlined and "professional" can negatively affect how trustworthy a researcher's online profile seems to be.

Embracing public engagement and dealing with disciplinary constraints

Many of the informants expressed an interest in making their research available and known outside academia; but, getting in touch and communicating with peers was also considered highly relevant. The boundaries between formal scholarly communication and informal scholarly communication and science communication are becoming less distinct, from an outside perspective, as they are collapsed into the same interface. Yet, all have specific demands and constraints, which are not easily reconciled. This tension between public engagement and disciplinary demands was experienced in similar ways across the focus groups, regardless of the discipline. This is in line with the finding of Chikoore, Probets, Fry, & Creaser (2016b) in a recent study on British researchers' attitudes towards public engagement. Yet, interestingly, our participants verbalized the constraints and expectations they encountered by contrasting their own discipline with their conceptions of other disciplines.

For instance, in a discussion on blogging, in one of the focus groups with medical researchers, the participants used examples from a conversation they had had with social sciences researchers. When one of the participants posed the rhetorical question whether they should start a blog, the other participants questioned the possibilities for gaining attention in their very specialized research area. One of them reflected: "Maybe it's also a little bit…, but maybe that's narrow-minded to say, that it depends on the research field, because I can imagine not too many people out there are interested in my blog on [the researcher's specialty]". In one of the social sciences/humanities focus groups, the participants expressed their wish to be an active voice in society. They compared their own presence in the media and in public debate with how they perceived it to be in other fields, and specifically, with what attracts rewards. Had they been active in another discipline, they concluded, maybe they would have invested in high-impact publications, rather than focus on being involved in the public debate. In contrast, in the other social sciences/humanities group, criticism of a perceived pressure on innovation as part of societal impact was articulated. One of our participants commented: "Like so much else, you are badly trained in that as an academic. Also, it is not as if you have learned to promote your research." Here, other disciplines, such as technology or medicine, are seen to have closer ties with companies, which makes it easier for them to be visible and collaborate with actors outside academia. In a situation where it is necessary to show how one's research is not only relevant through actually delivering results, but, also how it directly benefits society at large – often narrowly defined as innovation and cooperation with industry – it is seen as important to engage in different ways of communicating. Across all disciplinary areas, this is seen as a challenge and reflected on in terms of tensions. Assumptions about how scholars in other research areas relate to public engagement activities functions as a projection screen, reflecting the practices in one's own epistemic culture.

There is a thin line between being visible and being too visible. Although the researchers were not particularly critical of others' presence in different forums, there was discomfort in relation to the issue of branding yourself. It was pointed out that the people around them have websites in their names, often, for example, to market themselves as speakers. Still, the risk of being too much of an entrepreneur was also discussed. Here, for instance, public Facebook pages are mentioned as unsuitable for a researcher to have. It is considered showing off. One participant was asked to like such a page by a colleague of hers. She reflected:

> "But I think maybe I'm not really such a good friend of this particular person, but I think it is a bit unserious, because I think he is boasting. It is not only to show what you do, but also how you do it, so to speak" [FG 4].

Even statements made in the media sometimes attract accusations of selling out. One of the participants commented: " ... and my colleagues then think but, hey, you are selling out. On the one side, you have to show, but on the other side … but in the media, you have to do it comprehensibly and without distorting ... " [FG 4].

Communicating research publicly or making oneself visible online requires different skills than inter-academic – formal, but also informal – communication does. Here, new barriers are encountered. These include the technology itself, legal knowledge, (specifically copyright), navigating the fine line divorcing selling-out and showing-off from positive visibility, and also interfacing with other professionals, e.g. PR staff or journalists, who are often involved in communicating with the public. Building a reputation as a researcher by catering to the different imperatives that govern academia and engagements with outside actors is experienced as difficult and articulated in relation to the tension between self-importance and modesty. While, for instance, writing blogposts and peer-reviewed research articles are activities that do not exclude one another, per se, and can certainly co-exist, in the experiences of our participants, there is a limit as to how public a researcher should be. The possibility of being accused of frivolousness, such as Weller (2011) sees as functioning as a disincentive for using new modes of publication, seems to be at work here. Establishing visibility at the fault line between self-importance and modesty in online representations means to strike a delicate balance. Yet, this balance appears as crucial for scaffolding a trustworthy reputation as a serious academic in an academic environment increasingly expecting the active self-branding of scholars, at the same time as pushing for increases in traditional output.

This leads to one of the biggest problems that emerges as hindering the integration of public engagement activities into the work of researchers, even when these demands can be balanced regarding how reputations are managed, namely, lack of time. As Noonan (2014, p.111) writes "the increasing subordination of academic work, both teaching and research, to a money-value metric compromises the structure and experience and time that academic freedom presupposes." The squeezing of academic time to suit the frame of New Public Management's audit culture by fitting more and more measurable activities into the working time has led to academics experiencing increasing time pressure (Garforth & Cervinková, 2009). Vostal (2014) explored the relationship between what he calls oppressive acceleration and guilt and contends that it results from a lack of control over time, that is from "the inability to set the pace for one's work and forced prioritization of tasks and/or people respectively". This chimes well with the experiences expressed by our participants, where the tension between delivering expected outputs – formal and informal – is increasingly expressed as encroaching on one's ability to freely structure research time and to engage in activities that cannot be accounted for in the existing system of merit.

Representation in networks and by publications

Another tension was articulated in relation to where to be represented and what the role of traditional publications is in this system. Recently, a number of social network services, specifically targeted at academics, have appeared, most prominently

ResearchGate and Academia.edu and to a degree also LinkedIn. These made their appearance in the focus group. For instance, in the following exchange the aim of LinkedIn was discussed:

> Researcher 1: What do you use it for?
> Researcher 2: LinkedIn, it's a way to make yourself visible to your peers
> Researcher 3: A professional social network
> Researcher 4: Do you talk to each other there or it is like … ?
> Researcher 3: I know you, and then you know me
> Researcher 5: Yes, since it's a network [FG 1].

Here, the way in which LinkedIn makes social and professional relations visible was highlighted. Often, this is related to a job search: "Several of those who are looking for jobs use this LinkedIn" [FG 5], said one participant.

Different platforms were used for different purposes. Still, all were discussed in terms of how you describe yourself as a researcher, both regarding your profile information and through your contacts. ResearchGate has gained prominence and it was mentioned in all groups. However, their usefulness was not evident to everyone, as was made clear in the following discussion:

> Researcher 1: So, it really is a thing this ResearchGate, it still feels like it's worth like nothing
> Researcher 2: Yes, but the thing is that many are on it
> Researcher 3: I think it's quite nice, but I don't use it so much either
> Researcher 1: I have been contacted a few times there by people who want stuff, but they could simply e-mail – kind of [FG 4].

Some of the researchers had profiles on different services, while others had only a vague notion of possible uses. Despite the fact that many only had a vague understanding of their benefits, ResearchGate and similar services are gaining traction. For those with profiles, the time needed to update posed a problem. Still, in all groups the dominant understanding was that being there does not hurt, even if it is not quite clear how beneficial they might be.

Interestingly, while academic social network sites are seen as opportunities to be discovered, they are not used that frequently for finding out about others. Rather, the services can be seen as a way to keep an address book of people you have met or work with. A comparison with Facebook is common. For instance: "Researcher 1: "Yes, it is like Facebook, it's kind of like a profile ..."; Researcher 2: "For nerds … " [FG 4].
When looking for information about other researchers, the participants agreed that a having a page on the institution's website was important, especially an updated description and publication list, as discussed above. Yet, when it comes to updating their own webpage or profile, people are considerably less consistent and often emphasize time constraints:

> Researcher 1: But do you do that then, that you go back to yours and fix it? [Laughter]

> Researcher 2: No, and I do not even have … I know that it is possible on our website, it is like this, you can have your private sort of link like, that is if you go to [the University] [FG 1].

While some of the issues discussed highlighted more general tensions, others were specific to disciplinary expectations on how reputation is built and trust is maintained. Tied to this were different ways and tools for finding out about others. While researchers in the medical sciences used Pubmed and even have a verb to accompany it ("to pubmed"), more book-oriented tools (Amazon.com or the library catalogue) were used in the humanities and social sciences. The following quote illustrates the tight connection between the search tool, the online presence and publications.

> "But you know on your own, if you want to look for someone, like some author, then you google it and then you go to their website. So, then I use that and look. Then I get frustrated if their publications aren't there. Then I love to really have the whole list to check what that person has done" [FG 4].

As reputation is built through publications, they are a central component in representing who you are as a researcher. This is the case both for what you expect to find out about others and how you manage your own presence. The formal representation by journals and university webpages was also seen as establishing trust. Publications, however, were not only viewed in the context of journals or recognized book publishers, but also online, where they are transferred to several different places, most prominently university webpages, institutional repositories, as well as discipline specific databases, library catalogues, social network sites or publishers' services. What we see is how the digital pieces are scattered throughout different parts of the web resulting in a puzzle with many parts that must be compiled in order to get the whole picture of a researcher's profile. Everything is held together by search tools, mostly Google, but also library discovery systems and specialized tools such as PubMed.

Genre differences were seen as important and these were negotiated as expressions of the tension between the different types of publications. Often this was related to differences between science communication and scholarly communication, frequently exemplified with social media content and genres of formal scholarly communication. One participant talked about his blog and compared it with traditional journal publications: "It was not the reflection of the cases, as such … and that means that maybe they were not sufficiently substantiated to be published in a journal, but nevertheless, interesting for someone else who may be able to relate to his own situation" [FG 3]. Here, the tension between professional expressions and personal reflections, which was discussed in greater detail above, was brought in to locate the functions of different genres. More precisely, a scale of legitimacy was introduced, where the journal article and personal opinion were on opposing sides, both being relevant and also legitimate, yet in different ways.

Conclusions: pressure to be visible, but traditions prevail

This study elucidates aspects of how expectations of being visible online are expressed as part of what it means to be an academic researcher. Today, in most cases, a simple web search will lead to a variety of a researcher's appearances on the web. These might include the institutional website – for those employed at a university or similar facility – mentions in the media, profile pages on social network sites, conference programmes,

minutes from meetings, student comments, publications, as well as citations or other references to those publications, and in all likelihood, private information. This list can be extensive and vary among researchers, depending on a variety of factors. However, these are traces of academic work that, together with the traditional output and merits, contribute to a researcher's image. Based on this image, judgments are made that contribute to how trust and reputation are formed and linked together. Thus, as the boundaries of scholarly communication are being redrawn, its purpose is being reconsidered. This plays out along fault lines that come with various tensions, some of which we encountered in our work and discussed here. One of the issues that underlies these tensions is what imaginaries of academic work and what it means to be a successful researcher are advanced on the various online arenas, along with which ones are demanded by other researchers, and importantly, also by university administration, PR departments and rewarded in evaluations or through career opportunities.

Discussions on science communication often include certain normative understandings of science and academic research, and of how a successful researcher might act in problematic ways (Felt & Fochler, 2013). In these contexts, often the narrative image of a goal-oriented, streamlined science, solving society's problems, accumulating knowledge and advancing on a straight trajectory is advanced. Our results point to the need to diversify the accounts of what it means to be an academic or a scientist in order to balance this image that is far removed from the actual messiness of scholarly practice. In the accounts of the focus groups, many of the difficulties that were mentioned were related, in one way or another, to this streamlined image of what success in research looks like and how to present such an image, while balancing various demands and constraints relating to the tensions between trust and reputation. Advancing more multi-facetted imaginaries of what it means to be an academic researcher, to produce academic work and to communicate it, is experienced as challenging.

Gradually, being searchable and having a solid online representation is turning into a participatory condition. Yet, not only is this far from easy for individual researchers to control, it is, as shown in our study, also characterized by a number of tensions. These tensions arise from frictions experienced between the personal and the professional arena, from the contrast between different target groups and from the visibility afforded by online forums – especially academic social network sites – as opposed to that gained from formal publications. The established distinction between formal scholarly communication, informal scholarly communication and science communication (public engagement) is becoming increasingly complicated, as they converge on the same platforms. To complicate things even further, this may also be the same platform where private communication and interaction occur. As different audiences are collapsed into one, writing styles, genres and ways of engaging diverge and the value of different types of output is judged in different ways and from different perspectives, which need to be catered to.

The researchers' scholarly communication practices, in these digital settings, are challenged by how informal and formal aspects relate to each other. This makes it harder to know which places and tools are important. Not all researchers are present on all networks and they use the ones they are on in very different ways. This makes, for instance, altmetrics a difficult challenge (Wouters & Costas, 2012). However, it can also be compared with how not all journals are represented in *Web of Science*, which is

still used for bibliometric analyses. Still, the central key to how trust and reputation are established and maintained continues to be institutional belonging and publications (Tenopir et al., 2015). However, as became clear in our study, alternative kinds of scholarly communication with peers through academic networks or general-purpose social media are considered important and are actively fostered. Yet, these are supported by more traditional credentials and, thus, trust is often established and situated in these traditional proxies, such as in journals or in institutions (Francke, 2008; Haider & Åström, 2016). The discussions in the focus groups show that researchers are aware of the possibilities that come from using dedicated online services for different types of communication, but also of the difficulties. These include a lack of time for updating, low usability of the technology itself and a lack of understanding of how it works and what its purpose is. Researchers already have detailed knowledge of how to judge and establish epistemic trust in their specific domains (Davenport & Cronin, 2000). Here, these tools can appear as quite crude attempts to make one size fit all, which does not account for all the delicate balancing and navigating necessary to make complex decisions to stay at exactly the right level between, for instance, private and professional styles or between showing off and being visible.

In conclusion, it becomes evident that the documents of traditional scholarly communication and equally traditional informal activities and science communication – different in different epistemic cultures – are what scaffolds trust and builds reputation. These are then used to judge and understand the online representations of other researchers. That is, social network sites, as well as webpages, are predominantly perceived of and used as tools to promote publications, conferences, and, to a lesser degree, public engagement activities and career advancements. This is not unlike what Nicholas et al. (2014) found in relation to how trust is established in and through online reputation tools. Rather than challenging the status of the formal scholarly publication, new social network sites seem to reinforce its importance by adding yet another indicator – or at least the possibility of an indicator through altmetrics – with which to establish traditional rewards, such as career opportunities and funding. Thus, new forms of informal scholarly and science communication and online visibility gain credence in relation to traditional formal communication and signs of merit, thus further stabilizing their value as academia's chief currency.

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Appendix

List of focus groups referred:
FG 1 – 2014-10-16
FG 2 – 2014-10-28
FG 3 – 2014-10-31
FG 4 – 2015-03-11
FG 5 – 2015-04-17

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