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Daniel, E, Hartnett, E & Meadows, M

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Abstract

Purpose

Social media such as blogs are being widely used in organizations in order to undertake internal communication and share knowledge, rendering them important boundary objects. A root metaphor of the boundary object domain is the notion of relatively static and inert objects spanning similarly static boundaries. A strong sociomaterial perspective allows the immiscibility of object and boundary to be challenged, since a key tenet of this perspective is the ongoing and mutually-constituted performance of the material and social.

Design/methodology/approach

The aim of our research is to draw upon sociomateriality to explore the operation of social media platforms as intra-organizational boundary objects. Given the novel perspective of this study and its social constructivist ontology, we adopt an exploratory, interpretivist research design. This is operationalized as a case study of the use of an organizational blog by a major UK government department over an extended period. A novel aspect of the study is our use of data released under a Freedom of Information request.

Findings

We present three exemplar instances of how the blog and organizational boundaries were performed in the situated practice of the case study organization. We draw on literature on boundary objects, blogs and sociomateriality in order to provide a theoretical explication of the mutually-constituted performance of the blog and organizational boundaries. We also invoke the notion of '*extended chains of intra-action*' to theorise changes in the wider organization.

Originality/value

Adoption of a sociomaterial lens provides a highly novel perspective of boundary objects and organizational boundaries. The study highlights the indeterminate and dynamic nature of boundary objects and boundaries, with both being in an intra-active state of becoming, challenging conventional conceptions. The study demonstrates that specific material-discursive practices arising from the situated practice of the blog at the respective boundaries were performative, reconfiguring the blog and boundaries and being generative of further changes in the organization.

Keywords: organizational blogs, boundary objects, sociomateriality

Article Classification: Research paper

Introduction

Research has highlighted the utility and importance of boundary objects as a means of mediating knowledge, developing shared perspectives and negotiating interests between groups and individuals undertaking collaborative tasks (e.g. Star and Griesemer, 1989; Carlile, 2002; Sapsed and Salter, 2004; Star, 2010; Scarbrough et al., 2015). Social media, particularly blogs and wikis, have become a popular means for groups and individuals to share views. In addition to being ubiquitous on the web, the use of social media has been widely adopted within organizations (Yardi et al., 2009; Shneiderman et al., 2011; Meijer and Torenvlied, 2014). Use of such media seeks to develop shared knowledge and shared perspectives, and hence we can consider their role as intra-organizational boundary objects.

A root metaphor (Alvesson and Sandberg, 2011) of the boundary object domain is the notion of relatively static and inert objects spanning similarly static boundaries. Much of this view arises from a consideration of physical boundary objects that show limited change in form whilst operating as boundary objects (e.g. Paterson, 2007; Akkerman and Bakker, 2011; Lee-Kelley and Blackman, 2012). In contrast, social media based boundary objects emerge over time as users engage with them. They also have other characteristics that suggest more dynamic operation including: they can be infinitely replicated and hence operate at multiple boundaries simultaneously, they can operate both synchronously and asynchronously (Tseng,

2007; Kolari et al., 2007; Buis and Carpenter, 2009; Page, 2010; Miller and Pole, 2010) and participants can contribute whilst concealing their identity or can make use of the artefact whilst not contributing by ‘lurking’ (Cranefield et al., 2015). This suggests the need for a theoretical lens that foregrounds the potential dynamic nature of both boundary objects and boundaries.

A sociomaterial perspective allows the immiscibility of object and boundary to be challenged, since a key tenet of this perspective is the ongoing and mutually-constituted becoming of the material and social (Orlikowski and Scott, 2008; Scott and Orlikowski, 2012; Kautz and Jensen, 2013; Mutch, 2013; Hardy and Thomas, 2015). A sociomaterial perspective also requires a consideration of performativity (Austin, 1962), that is objects and their inseparable social aspects, do not simply reflect the world, they also intervene to change it (Schultze and Orlikowski, 2010; Cecez-Kecmanovic et al., 2014). Hence a sociomaterial perspective suggests that boundary objects and boundaries are continually evolving in a way that neither is prior to the other, that they cannot be separated, and that they change the setting in which they operate (Scott and Orlikowski, 2013; Orlikowski and Scott, 2015).

The aim of our research is therefore draw upon sociomateriality to explore the operation of social media platforms as intra-organizational boundary objects.

Consistent with our research aim and a lack of previous studies that have explored the use and implications of emergent social media as boundary objects, we adopted an exploratory research design. This was based upon an interpretivist case study of the use of a blog by a major UK government department.

The aim of the paper is to provide an empirically and theoretically based understanding of a social media based boundary object. We begin the paper with a review of prior literature in the boundary object domain. This is followed by consideration of literature addressing organizational blogs and of our theoretical lens of sociomateriality. We then describe the method used to undertake the empirical stages of this study including data analysis and a brief background to the case study to orientate the reader. The findings section describes the data generated from the case study and a discussion section draws on our lens of sociomateriality to theorise the study findings. The conclusion section identifies the contributions of the study and includes recognition of the limitations of the study and

opportunities for further research. We also discuss the value of the work to practitioners and fellow academics.

Boundary Objects: Prior Literature

Star and Griesemer (1989) developed the concept of a boundary object in relation to a context where work is conducted by diverse groups of actors who need to cooperate. Put simply, *'boundary objects are a sort of arrangement that allow different groups to work together'* (Star, 2010 p. 602). Rather than refer to the edge of a domain, Star argues the term boundary *'is used to mean a shared space, where exactly that sense of here and there are confounded'* (Star, 2010 p. 602/3). Important characteristics of boundary objects include their ability to provide this shared space where people interact, align their work, create shared meaning and importantly, mobilize to create action (Henderson, 1999, Star and Griesemer, 1989, Johnson, 1988, Latour, 1996, Winner, 1980). More recently, Scarbrough et al.'s (2015) discussion of boundary objects reinforces their incorporation into practice and their performative nature, noting that *'the relations between objects "orchestrate" the tasks of multiple groups'* (p. 217).

Three important characteristics of boundary objects have been identified (Star, 2010; Star and Griesemer, 1989). The first is interpretive flexibility, that is, they mean different things to different people, and can thus be used to different purposes. The second relates to the material structure of different types of boundary objects; *'an object is something people ...act toward and with. Its materiality derives from action...'* (Star, 2010 p.603). The final component is the question of scale; Star notes that *'all concepts are most useful at certain levels of scale. I think the concept of boundary objects is most useful at the organizational level'* (Star, 2010 p. 612).

Boundary objects can apply to a typology of boundaries: syntactic, semantic, and pragmatic (Carlile, 2002). At a syntactic boundary, it is necessary to develop a common language. Carlile stresses that this is an important first step in representing the knowledge of those using the boundary object. At a semantic boundary, shared meanings are developed, often relying on translation between the different meanings held by participants. Finally, at a pragmatic boundary participants work together to get things done, which requires the discrete

knowledge from participants to be transformed into new knowledge that both guides and derives from their shared action. The orientation of boundary objects towards action is highlighted by Levina and Vaast (2005) who distinguish between designated boundary objects and boundary objects-in-use. They note that designated boundary objects may not become boundary objects-in-use until they are locally useful and develop a common identity across fields.

Doolin and McLeod (2012) undertake a sociomaterial consideration of physical boundary objects and identify five characteristics. Consistent with Levina and Vaast's (2005) concept of a boundary-object-in-use, they assert a boundary object should be meaningfully incorporated into local practices; it emerges over time and is reconfigured in response to particular contingencies; it exhibits sociomaterial agency; it is performative and consistent with the notion of interpretive flexibility (Star, 2010; Star and Griesemer, 1989) it can be enacted in multiple ways.

Prior literature has explored a wide range of types of boundary objects. The majority of studies have involved physical artefacts, such as plans or prototypes, resulting in undue emphasis on the physical characteristics of boundary objects. Examples include teacher portfolios (Akkerman and Bakker, 2011), patient records (Paterson, 2007), acetates (Adams et al., 2013), software specifications (Barrett and Oborn, 2010), strategy tools (Spee and Jarzabkowski, 2009), a PRINCE2 course description and appraisal (Lee-Kelley and Blackman, 2012), flip charts and whiteboards (Smith, 2010), timelines and Gantt charts (Yakura, 2002). Fewer studies have recognised that boundary objects do not have to have a physical manifestation and can include common methods (Carlile, 2002). Sapsed and Salter (2004) consider the use of a virtual boundary object in a dispersed organization, and point to the potential limitations of such tools when lines of authority are ambiguous and there is a lack of face-to-face interaction.

In this study, we explore the use of an organizational blog as a virtual boundary object in a dispersed organization, in order to generate a grounded exploration of social media platforms as boundary objects. Consistent with our intention to challenge assumptions underpinning the boundary objects literature, Ewenstein and Whyte (2009) seek to highlight limitations in the predominant notions of boundary objects. They propose a distinction between *boundary* objects (which they see as static and concrete) and *epistemic* objects, which are described as

plural and evolving. Nicolini et al (2012) also refer to epistemic objects, suggesting that they generate ‘*collective problem solving sustained by discursive practices such as questioning, framing ... probing and telling “war stories”*’ (p. 620).

Finally, we note that a number of authors have begun to comment on issues of power and legitimacy relating to boundary objects. Kimble et al (2010) suggest that a boundary object can be a resource for actors to further their own interests, while Oswick and Robertson (2009) note that while boundary objects can support change, they can also reinforce existing top-down power structures, particularly those arising from positional power. The democratising affordances associated with blogs (Siapera, 2008), which will be discussed in the next section, suggest that they may be able to challenge extant power structures.

The Characteristics of Organizational blogs: Prior Literature

A blog is a web-based log or diary that usually has a sequence of dated entries of text (Yardi et al., 2009; Kolari et al., 2007; Page, 2010; Tseng, 2007). It may be authored by a single person, or by several people taking turns to add content. Blogs often feature the opportunity for readers to post feedback on the authors’ posts or to add their own views and comments (Buis and Carpenter, 2009; Miller and Pole, 2010). Hence, blogs allow subjective authorial expression. Siapera (2008) examines the connection between blogging, subjectivity and autonomy, discussing occasions that give rise to a blog posting and what each post accomplishes in collaboration with others. He concludes that blogs contribute to the democratic process in a novel way, and because of its use of chronology, readers’ comments and hyperlinks, a blog becomes a collaborative and emergent form of expression, although in order to achieve democracy questions of power and distribution must to be addressed (Siapera, 2008). Since it is shared and can be archived, it forms a repository and a visible record of views, reactions and assurances (Efimova and Grudin, 2007; Hourigan and Murray, 2010; Huh et al., 2007).

Whilst many blogs are written for widespread public consumption (Herring et al., 2005; Panteli et al., 2011), blogs are increasingly being used within organizations. Such blogs can facilitate ‘*access to tacit knowledge*’ (Huh et al., 2007 p 2447) and provide a form of real-time peer-to-peer collaboration and review (Shneiderman et al., 2011). Papadopoulos et al

(2013) find that staff who enjoy sharing knowledge are happy to share knowledge via their organizational blog. The ability to reach across large, dispersed and heterogeneous communities allows blogs to help organizations bridge knowledge gaps that are due to weak ties and structural holes (Granovetter, 1983), thus allowing staff to influence hard-to-reach colleagues (Jackson et al., 2007). Organizational blogs may also be used as an additional channel of internal communication from management to staff, often as a means of top-down dissemination of organizational initiatives and regulations. Blog authorship and control may both arise from, and promulgate, various types of power, including positional, resource and expertise-based power (Leonardi and Barley, 2010). Hence, as well as an apparent democratising role, organizational blogs can act as a means of normative control over staff and can make ‘*a substantial contribution to the political process*’ within an organization (Siapera, 2008, p.61).

Sociomateriality and Boundary Objects

Many studies of boundary objects have been phenomenological and atheoretical in nature, promoting normative approaches to practice (e.g. Lee-Kelley and Blackman, 2012). Those studies that adopt a theoretical perspective, seek to recognise both the social and material dimensions. Theoretical approaches that have proved popular are structuration theory (Giddens, 1984), with a number of studies in the IT domain (e.g. DeSanctis and Poole, 1994; Markus and Silver, 2008) and actor-network theory (Latour, 1996) which has similarly spawned IT based studies (e.g. Briers and Chua, 2001; Kimble et al., 2010). However, both recognise an ontological distinction between the social and the material.

Described as a ‘*dense philosophical forest*’ (Leonardi, 2013 p.27), scholars of sociomateriality propose two views of the relationship between the social and the material. One view, which is based on the ontology of critical realism, sees these as separate but interacting or imbricated (e.g. Mutch, 2013; Leonardi, 2012). The other, which is based on an agential realist ontology, views them as intra-acting or mutually-constituted (e.g. Orlikowski, 2007; Schultze, 2014). The latter perspective has been referred to as strong sociomateriality (Mutch, 2013; Jones, 2014). Whilst, perhaps the more challenging to operationalise in an empirical study (Wagner et al., 2010), the strong sociomateriality foregrounds notions of inseparability, relationality, intra-action (Jones, 2014). As Barad (2003) notes, intra-action represents a profound shift from the notion of interaction, the latter

which *'presumes the prior existence of independent entities'* (p.815). In contrast, she describes how in intra-action neither the social nor the material is prior and it is through intra-action that the properties of the phenomenon of interest become determinate or meaningful. She also presents the concept of discursive practices, noting they reflect what counts as meaningful in the relevant setting and describing them as *'specific material (re)configurings of the world through which local determinations of boundaries, properties and meanings are differentially enacted'* (p.821). Reflecting this inseparability between discourse, practice and materiality, Orlikowski and Scott (2015) adopt the term material-discursive practices to describe these intra-acting reconfigurations. Sociomateriality also foregrounds the notion of performativity (Jones, 2014; Schultze, 2014), emphasising that material-discursive practices do *'not merely reflect the world as it is, but intervene in it'* (Jones, 2014 p.897).

Bringing our three bodies of literature together, adoption of strong sociomateriality as a theoretical lens sensitises us to the possibility that boundaries are not static and hence spanned by separate boundary objects. In contrast, both the boundary object and boundaries are performed in the ongoing situated practice of the organization.

Research Method

Consistent with our sociomaterial approach, we adopted a social constructionist ontological worldview and a corresponding interpretivist view of epistemology (Walsham, 1995; Klein and Myers, 1999). We adopted a case study research design in order to be able to explore the ongoing intra-action of the blog and its contextual setting (Benbasat and Zmud, 1999; Stake, 1995). This was operationalised by a single case study that explored the use of a blog in a major UK government department over a four-year period.

There is often concern about single case studies, with notions that it is not possible to generalize findings from such studies. Lee and Baskerville (2003 and 2012) are emphatic that single case studies provide valuable insights and opportunities for generalizability, including, as in this study, moving from empirical data to a theoretically based perspective. Similarly, Flyvbjerg (2004) defends the single case study, noting *inter alia* that context-dependent knowledge is valuable. Walsham (2006) is also forceful in his support of single

case studies, noting that generalizations can '*take the form of concepts, theories, specific implications or rich insights*' (p.322). We follow Walsham's (2006) counsel, and consistent with our strong view of sociomateriality we generate insights through the study of '*particular, situated practice*' (Jones, 2014).

Data Collection

Three complementary types of data were collected. Firstly, one of the research team undertook a series of face-to-face interviews with key informants in the government department. Four interviews were undertaken, one each with a director, a manager and a team member in the internal IT team and one user of the blog (22 pages/11,000 words). Interviews were guided by a semi-structured interview schedule and explored *inter alia* priorities of the Department and its functions, structures, communication and use and impacts of the blog.

The second source of data was the content of the blog, which was made public under a Freedom of Information (FOI) request (Worcester, 2009; Ico.org.uk, 2014). This resulted in all the blog postings between 2006 and 2009 made by the Permanent Secretary, who owned the blog, and the senior managers he invited to contribute, being placed in the public domain (59 pages/25,000 words). It was judged that it was not appropriate to release the responses posted by staff within the Department, since these had been made in the belief that it was an internal blog. However, at regular intervals, the senior managers involved summarised responses and hence we can infer the views of staff. The information provided under the FOI request provides a unique set of data including time-stamped, verbatim contributions, clearly demonstrating the socially constructed and emergent nature of the blog. This unique data source contributed to the richness of the case study and, in part, supported the use of a single case study. In addition to the findings we present, this study is of value as it demonstrates the use of publicly available data from regulatory or legal sources. As we show, such sources can often reveal detailed information that would not otherwise be provided by organizations, which can provide novel perspectives on organizational practices.

Finally, other sources of data such as internal documents (internal project briefs, implementation progress reports, internal memos), site observations and field notes were collected (Denzin and Lincoln, 1998). All data were brought together, both to identify areas of agreement but also, consistent with the interpretivist approach, to identify and value differences in perspective (Klein and Myers, 1999). This use of multiple data sources

provided another contribution to the depth and internal validity of the case study and hence support the use of a single case.

Data Analysis

The face-to-face interviews were recorded, fully transcribed and one researcher coded the transcripts using the software package QSR NVivo (Crowley et al., 2002). Two other researchers analysed the blog posts using tabular layouts in a word processing package. All three researchers reviewed all analysis, further increasing the internal validity of the study. Initial analysis was undertaken by means of open coding (Dey, 1993). Guided by the notion of inseparability, rather than identify multiple discrete and axial codes, we reviewed the data for more holistic instances of intra-action between the blog and boundaries within the organization. We did not predefine the instances; rather let them arise from the data. Three exemplar instances were identified: a performative portrayal of the organization, making the internal external and reconfiguring accountabilities. These three instances are described in the Findings section.

The following section provides a brief background to the case study in order to orient the reader.

Background Mise en Scene: Blogging in a major UK Government Department

The case study is based on the UK Home Office, which is a major central government department that employs over 25,000 staff across more than 20 locations. The Department is led by a Permanent Secretary who is a career Civil Servant. The Department is responsible for a wide range of diverse activities including passport and visa processing, enforcing border control, monitoring immigration, overseeing policing and leading counter-terrorism activities (Home Office, 2006, 2007 and 2008). The case study covers the period 2006 – 2009.

At the start of the study (2006), the Permanent Secretary wanted to implement new systems and ways of working in order to improve the effectiveness of the Department and ensure value for money for UK citizens. A number of high profile errors had exposed the Department to severe public and media criticism (Home Office, 2006; Travis and Gillan, 2006; Mulholland and Tempest, 2006). Internal inefficiencies and the external criticism resulted in frustrations and poor morale amongst staff, with this being more acute in certain locations and functional areas. During the period of the study, a major group within the

Department, the Border Agency (BA), which accounted for approximately 18000 staff, was formed by a merger of two formerly separate groups.

In order to facilitate the new ways of working, integrate the new BA and to address the poor morale, the Permanent Secretary launched the organization-wide blog in June 2006, with an encouraging and inclusive tone:

I asked the senior management ...how we are going to transform the Department. There was lots of feedback and I am keen to involve everyone Don't be shy, I want a new culture where we are all heard [click to send comments] (June 2006)

Findings

Sensitised by our lens of sociomateriality, we present our findings as three exemplar instances of how the blog and boundaries were intra-actively performed. This emergent and ongoing performance resulted in wider changes both inside and outside the organization. The following section presents the empirical data and the following Discussion section provides a theoretically based explication.

Performative portrayal of the organization

A key rationale for the launch of the blog was to allow all staff, from the widely distributed staff in operational settings such as airports, courts and prisons to share their views of the organization. The organization already had a number of communication channels, for example it had a staff magazine, Inside Track, which was sent to all staff; senior management visited regional offices and operational sites and could send emails to all staff, which were referred to as 'globals'. Whilst these communication methods sought to include means for views and information to travel upwards and across the organization, their broadcast nature resulted in a largely top down pattern of communication.

The blog enabled staff to share their candid views of the organization. Users were able to post comments anonymously or under a pseudonym. This was utilized by users with approximately 55% of comments being posted without the contributor's name. Pseudonyms

included names that reflected the users' intended outcomes from participating in the blog such as '*Driver for change*'. Whilst both named and anonymous responses were welcomed, some of the bloggers noted some frustration with the use of pseudonyms. For example,

Thanks for the continued lively response to my initial topic and my posting. Particular thanks to those bloggers who are prepared to 'own' their views with a name. (October 2007)

The veil of anonymity encouraged users to be candid with their view of the organization, and the high incidence of postings without names suggests that anonymity was valued by users. The ability to express candid views in authentic manner made the blog distinct from the other communication channels in the organization. For example, when comparing the staff magazine to the blog, the Information Commissioner described the magazine as 'sanitized' and observed:

The type of information in an authorised publication [the staff magazine] is therefore wholly different in quality to a blog site where staff are encouraged to provide personal views in an effort to spark further debate. (FOI Decision Notice, December 2009)

A comment from one of the face-to-face interviewees illustrated further supported the notion that the authenticity of the postings on the blog contributed to its power to interest and incite others. In describing the comments from one user on IT service provision, he noted:

It was a rallying call and if I could have paid one of my staff to write it, I would have but it wouldn't have been genuine. It was from someone who was working in one of the regions and it was affecting their work. They had poor service in IT for ages and were very frustrated.....[Interviewee 1]

The opportunity for users of the blog to address issues that they felt strongly about and in their own words, encouraged many bloggers to express a range of emotions in their postings. For example:

I have heard the many messages about the inadequacies of our systems for pay, IT,

etc. I am very fed up that we are not making more progress. (October 2006)

the current tone of comments on the blog is a bit sceptical and downcast – can anyone cheer me up please? (July 2006)

I remember some staff events which have lifted my spirits...(December 2006)

I know some people in Liverpool are angry about the decision in principle to site our shared services centre in Newport, South Wales...(February 2007)

I don't feel defensive or angry about comments on the blog. I am happy for people to say what they think (politely, of course). (February 2007)

In addition to the anonymity, candour and authenticity offered by the blog, it also provided a cumulative record of all comments made, which could be viewed and responded to asynchronously by staff wherever they were, or whatever their role in the organization. Hence, the content and tone of the blog evolved according to the subjective authorial expression of its users. The interests of the users influenced the choice of the guest bloggers invited by the owner of the blog. For example, according to a comment from the owner, the greatest numbers of posts were about pay, particularly delays and mistakes in pay. Hence, he invited the Head of HR to be a guest blogger and respond to the issues raised. There were also many comments, mainly critical, about the provision of IT, prompting an invitation to the Head of IT to be a guest blogger.

The opportunity for staff to express their views forcibly and the strength of sentiment about issues in the Department was recognised by the Permanent Secretary. In a posting that sought to ensure that staff treated their involvement in the blog responsibly, he enjoined: *..don't throw rocks from the side-lines* (April 2009). The statement also reflects that he did not want users to view themselves as bystanders or outsiders, viewing the use of the blog and possible changes to the organization as something out with themselves. Rather, the he viewed, and wished them to view the blog as a means of staff and management performing shared views of the organization and generating means of improving it.

In addition to being used in multiple locations and at different times, the blog was also consumed or used in multiple ways. Those interviewed described how many staff read the blog but did not post on it. However, they still found it a unique and informative means of consuming others' understanding of the organization and hence generative of their own views or perspectives on the organization.

As mentioned previously, the blog was not intended merely as a communication tool, the intention was for its use to result in change in the organization. In the introductory post from the Permanent Secretary in June 2006 attempted to set out the purpose for the blog as supporting change initiatives and that the views and responses of staff would shape the blog. This performative role of the blog was recognised by the Information Commissioner, who stressed the importance of anonymity and candour:

The blog forms part of the deliberative process feeding into the current reform agenda, and this agenda would be adversely affected if it were not able to draw on the candid views of staff about the department. This would have a knock on effects on the ability of the Home Office to operate more effectively in the future. (FOI Decision Notice, December 2009)

Provision of IT services provides an example of changes in practice arising from suggestions made on the blog. The Head of IT described users' suggestions for improvements in the provisioning of IT services from external suppliers:

I was interested to read a couple of blog comments that suggested a better way of requesting services by sending them directly to our suppliers. (February 2007)

These were taken up by IT and it was acknowledged that these suggestions were a good way to...*cut down on the number of process steps and minimise(s) any opportunity for delay.*

The Permanent Secretary was also keen to emphasise that the blog had directly led to tangible changes in the organization:

Someone commented on the blog that the long service awards were the first 'victory' for bloggers. But if you think of the changes we have made on moderation and on

core skills assessments – to take just two big blogging conversations in the last year – I think there are quite a lot more occasions on which you say and we listen and then act. (August 2009).

Making the internal external

We were drawn to, and able to, undertake this study because the postings on the blog by the main contributors were made public under a Freedom of Information request. The initial response of the blog owner, the Permanent Secretary, on the blog showed that he had not expected the contents of the blog could be put in the public domain and that he was not supportive of this:

.....the Sunday Telegraph asked, under freedom of information, if I would publish the blog. But surely this is our internal space for a frank conversation? I can't see what it's got to do with the national press, can you? (October 2006)

The desire to keep the contents of the blog, and the matters addressed within it, within the Home Office was underlined by the Permanent Secretary seeking to stop the release by applying for an exemption from FOI. A key tenet of FOI is that there is strong public interest in the functioning of major public bodies, and making the internal workings transparent aids accountability. This was seen as particularly true for the Home Office:

The work of the Home Office is high profile and there is considerable public interest in knowing that it is filling [sic] its functions effectively. Releasing information about how the department is managed and how issues identified internally by staff are being raised with and addressed by senior officials can help inform the public debate about the performance and accountability of the department and reassure the public that issues are being identified and tackled. (FOI Decision Notice, December 2009)

The counter argument to this put forward by the Home Office was that the exposure of internal debates would stifle frank discussion and hence limit public bodies in being able to engage with their staff. As noted previously, the Information Commissioner judged that it was in the public interest to release the postings of the blog owner and the senior managers that he had invited to contribute, but it was not appropriate to release the responses of staff.

In addition to trying to block external disclosure by saying it would prevent frank internal discussion, the Home Office suggested release of internal information would breach the Civil Service Code. All staff are bound by this Code, which *inter alia*, precludes them from unauthorised public disclosure of information. The Information Commissioner was clear that that disclosure under FOI was different from unauthorised disclosure. Rather than limit engagement by staff, the Commissioner suggested that publication of the blog may encourage participation, particularly since staff could not normally air their views on the workings of the organization due to the strictures of the Code,

Whilst the Home Office was required to comply with the ruling, at one stage of the process, they took over eight months to conduct an internal review. The Commissioner rebuked them for this, suggesting that such a review should take between three and six weeks. In its case to prevent release, the Home Office had also suggested the information was current and addressed issues that were *“live” ones which were being actively worked on*’ (FOI Decision Notice, December 2009). The delay in complying with the process therefore offered a temporal means of managing disclosure and allowing the dulling effect of time to reduce the perceived sensitivity of the information.

Reconfiguring accountabilities

A key means of allowing the blog to engender change in the organization was to allow, and even encourage, staff to voice publicly the limitations they saw in key services and functions. This was encouraged by the blog owner by inviting senior staff, such as the Head of IT and the Head of the Border Agency to be guest bloggers, which was, in turn, a response to the many comments on such services and functions by staff.

The views about IT service provision, and the responses from IT staff provide a vivid example. IT services received many critical comments from users of the blog, as summarised by one of the key informants during the interviews:

.....[the] blog - and it's great, actually. It's a place where IT gets slandered the rest of the time..... There are lots of people who go on there. You can go on it and make

any comment you like, so you can imagine that quite a lot of people go on there and moan about the IT. [Interviewee 1]

Despite the critical tone of most of the comments, the Head of IT's responses remained professionally calm, promising that the comments would inform the practice within IT:

I would like to thank all the bloggers who took the time to share their thoughts, comments, ideas and unfortunately, frustration with me and my team. We have been reviewing the responses....(February 2007)

The value accorded to users' reflections on IT service was demonstrated by a particular case. One regular and outspoken user of the blog, who was seen to have a particular vantage point on colleagues' views of IT services, was 'tracked down' with a view to enrolling them into a more formal role:

We tracked down the anonymous writer and they now provide a regular temperature check on IT performance and local office sentiment. The writer is likely to become, over the next few months, a local change agent in an important technical change programme. [Interviewee 1]

Whilst reviewing and responding to postings on the blog could be considered as representing an implicit or diffuse instances of evolving accountability, the blog also generated instances of explicit changes to accountability. For example, the Head of IT used the blog to announce his department's first service level commitments:

I am delighted to confirm that we will be operating to our first ever committed service levels. This is a modest but hugely significant achievement that will be followed by further clear commitments to measureable performance in our services to customers (January 2007)

He then provided a set of quantified service levels for the three most commonly requested services: a new standard desktop PC, a new account and access to a shared folder. He later reiterated this commitment to these service levels:

The introduction of the new Service Level Agreements (SLAs), whilst I agree it is a modest beginning, demonstrates our commitment to improve our accountability for the level of service that we offer. (February 2007)

He assured staff that the SLAs would be monitored and the performance figures would be published, on the blog and elsewhere, so that users could determine if the commitments made were being honoured.

The Head of HR was also invited to be a guest blogger and he used the blog to set out his function's service levels and to report on performance against those levels:

Pay queries are categorised by priority: top priority cases (nil pay or severely reduced pay) are dealt with in 24 hours. This target was achieved each month between January and March. In March 93 per cent of routine pay work was dealt with in time for the next pay day, and the team is working to deliver 100 per cent on these cases within the next couple of months. (April 2007)

Discussion

The case suggests that the blog functioned effectively as a boundary object. It enabled staff in different functional areas, geographical locations and at different grades to develop shared and new knowledge, and allowed them to 'act toward and with' (Star, 2010, p.603) this knowledge. For example, there had previously been little common knowledge of the problems caused by poorly functioning IT. The blog gave individual staff voice (Mowbray et al., 2015), which the interview data confirmed had been absent in such a large, dispersed organization and where senior staff had previously employed broadcast, uni-directional communication methods. The cumulative nature of the blog allowed a shared view of the situation to be developed through discursive practices (Ewenstein and Whyte, 2009) and often involving 'war stories' (Nicolini et al., 2012). The continued, although punctuated, use of the blog over the four-year period considered by the case study and its use by a wide range of staff demonstrate that both the blog owner and staff found the blog effective; it was locally useful, hence a boundary object-in-use (Levina and Vaast, 2005).

The study's demonstration of participants working together to get things done calls to mind the definition of a *pragmatic* boundary (Carlile, 2002), with new knowledge that both guides, and derives from, shared action. However, rather than view the boundaries at which the blog operated as static entities to be crossed or bridged, our adoption of a sociomaterial perspective sensitises us to the notion that these boundaries were in a constant state of becoming (Orlikowski, 2007; 2009). The blog was in a similar state of continual becoming, with posts being made in response to the earlier comments of others, resulting in a string of date and time stamped comments (Efimova and Grudin, 2007; Hourigan and Murray, 2010; Huh et al., 2007). However, the sociomaterial perspective moves beyond this virtual emergence and emphasises that the blog was becoming in the sense that its use and performativity evolved over time. This is consistent with 'new' perspectives on the idea of a boundary object, e.g. the term 'epistemic object' may be used to refer to objects that are characterised by "lack and incompleteness" (Ewenstein and Whyte, 2009, p. 9), or the embodiment of "what one *does not yet know*" (Nicolini et al., 2012, p. 618). The widespread use of the blog, and its range of uses, demonstrated that it became an accepted practice within the Department. However, such practices are not simply passive outcomes, rather '*practices are constitutive of the world*' (Orlikowski and Scott, 2015 p.698). Hence, ongoing use of the blog changed the ongoing operation of the Department including its putative boundaries.

Consistent with notions of participative strategy, the intention of the blog was to provide a forum where senior staff could engage with staff in different functions, geographies and grades in order to hear their views on the challenges the organization faced and suggestions on how these challenges could be addressed. In his adjudication, the Information Commissioner reinforced that the ultimate aim of the blog was to allow the Permanent Secretary to improve the operation of the Department and hence provide a better service to the public. The intention from the outset was therefore that the blog would be performative. That is, it would not reflect the organization, but would intervene to change it (Jones, 2014). The blog enabled specific material-discursive practices (Orlikowski and Scott, 2015) that did not arise from other forms of communication, such as the staff magazine or global emails. For example, anonymity of postings on the blog encouraged candour and subjective authorial expression and authenticity (Siapera, 2008). Similarly, the ability to collect, collate and share opinions from many and varied members of staff, suggested a 'wisdom of the crowd' that has been found to be important in other sociomaterial explorations of social media (Scott and Orlikowski, 2012; 2014). Hence the specific material-discursive practices of the blog

contributed to its performativity and hence its ability to intra-act (Barad, 2003) and change the organization.

The release of the blog under the Freedom of Information request provides a marked example of the constitutive intra-action of the blog and the boundaries of the organization. As we have noted we were drawn to, and able to, undertake this study because the postings on the blog by the main contributors were made public under a Freedom of Information request. This request was initially opposed by the Permanent Secretary, but this opposition was not supported by the Information Commissioner. Operation and release of the blog resulted in information that was previously within the organization, being made publicly available. Hence, existence and operation of the blog was entangled with knowledge once internal to the organization, becoming externally known. The Commissioner's review demonstrates how the specific material-discursive practices of the blog contributed to the reconstitution of what was internal and external to the organization. He stated that the blog was different to the staff magazine, *Inside Track*, due to the authenticity and candour of the postings on the blog that contrasted with the 'sanitised' version of the organization presented in the staff magazine. The Commissioner's adjudication also suggests that releasing information into the public domain will influence how the blog is used and hence its temporal emergence. He notes that this change may either be in the form of staff being reluctant to share candid views on the blog, since these may be placed in the public domain. Conversely, since staff in the Department are prevented from speaking publicly about the organization by the Civil Service code, publication may encourage staff to post comments they could not publicly say or publish through other channels. Hence, consistent with the notions of intra-action and inseparability, neither the changing internal-external boundary caused by the Freedom of Information release nor the nature of the blog were prior, rather they were intra-acting.

Scott and Orlikowski (2012) highlight that social media platforms provide significant opportunities for the reconfiguration of accountabilities. Consistent with their findings of social media in the travel sector, use of the blog suggests a 'mash' (p.37) of hierarchical and social forms of accountability. As we shall return to later, that the blog was led by the most senior member of staff in the organization with significant positional and resource power, bestowed a significant hierarchical dimension to these accountabilities. The Permanent Secretary could decide which responses from staff he would respond to, and hence highlight and prolong discussion and which staff suggestions he could action. He could also decide

which senior staff he would invite to be guest bloggers on the site and hence be openly accountable for the performance of their functions. Scott and Orlikowski (2012) also describe how engaging in social media in the travel sector means '*we see travel in and through others*' (p.37). Similarly, through use of the blog, whether posting comments or consuming the comments of others through 'lurking', staff were able to see and respond to how others viewed the organization, contributing to the distributed, social accountability referred to previously as the 'wisdom of the crowd'. In the case of the blog, the distributed views about the poor performance of IT and HR contributed to the Heads of these functions being called to account, and influenced what they accounted for. The hierarchical and social forms of accountability intersected performatively, as demonstrated by the introduction and announcement of service level agreements by both the IT and HR functions. Whilst not explored in this study, adoption of such agreements is also likely to be performative, since the relevant functional staff could be expected to change how they make decisions, deploy resources and report outcomes in order to achieve or demonstrate compliance. Hence it is not solely the blog and organizational boundaries that are emergently performed, but through '*extended chains of intra-action*' (Jones, 2014 p.917) aspects of the wider organization and its external context are also an ongoing performance.

Stein et al (2014) observe that emotions receive little attention in sociomaterial studies. The opportunity for subjective authorial comment provided by the blog allowed users to describe a range of emotions. Whilst these may be modest compared to other contexts, such as the 'life and death' considered by Jones (2014), it is uncommon for such emotions to be shared across the restrained environment of a UK government department and in a form that can be constituted into a permanent record. As noted previously, the ability to express such emotions without the sanitising associated with the staff magazine, was specific to the material-discursive practices of the blog. The ability to capture emotion increased the persuasiveness of the blog and hence was entangled with its performativity and ability to change the boundaries and operation of the wider organization.

Whilst previous studies have identified emotions as a '*possible lacunae*' (Jones, 2014 p.899) in sociomaterial studies, we suggest that power and legitimacy have been understated in prior studies. For example, in their sociomaterial study of boundary objects, Doolin and McLeod (2012) do not explicitly recognise the role of power, despite prior studies of boundary objects based on other theoretical perspectives linking their use with the mobilization of power

(Oswick and Roberstson, 2009; Kimble et al., 2012). The open and participative nature of a blog, allowing subjective and autonomous expression by users (Siapera, 2008) suggests an ostensibly democratic space. Such spaces, which Meijer and Torenvlied (2014) refer to as post-bureaucratic, would be expected to reduce or remove extant power structures. However, the case shows that the blog allowed the mobilization and reinforcement of extant power structures. The most obvious example was the Permanent Secretary drawing on his positional power, and through that his access to resources, to influence multiple aspects of the blog. These included where it was located on the intranet and hence how easily it could be found; which posts he responded to; and which senior colleagues were ‘invited’ to account for the performance of their function. The considerable power of the Permanent Secretary bestowed legitimacy on the blog, which contributed to its use becoming accepted and routine practice within the Department. His positional power ensured that it was acceptable to use the blog during working hours, and that it was not a distraction from duties but a recognised and even expected part of them. We suggest that this study helps to illuminate the processes by which a boundary object can sustain or challenge an existing power relationship – and how it can support or disrupt current boundary infrastructures (Oswick and Roberston, 2009).

Conclusion

This study has adopted a sociomaterial perspective in order to explore how social media platforms and organizational boundaries are inter-actively performed. The specific platform explored was a blog and the setting, a large UK government department, which had multiple functional, geographic and hierarchical grade boundaries. The study addresses calls for empirical research that explicate how and why boundary objects operate (Carlile, 2004; Doolin and McLeod, 2012). Whilst public facing and organizational blogs are ubiquitous, to our knowledge, they have not previously been explored as organizational boundary objects.

Sociomateriality, particularly in its strong form, is a highly challenging basis for an empirical study (Wagner et al., 2010; Cecez-Kecmanovic et al., 2014) as it provokes us to challenge our every-day, familiar and convenient separation of objects, whether physical or virtual, from the social. Critics have questioned if the sociomateriality offers anything over and above other approaches that consider an inter-twined or inter-acting but ontologically separate social and material, such as actor network theory or socio-technical studies (Kautz

and Jensen, 2013). We believe that the distinct perspective and discipline engendered by sociomaterial approach has allowed this study to make a unique contribution of providing an empirically and theoretically grounded understanding of how and why social media platforms operate as organizational boundary objects. Drawing on Alvesson and Sandberg's (2011) call to challenge the assumptions within domains, our sociomaterial lens has highlighted the dynamic nature of both the boundary object studied and the boundaries at which it operated, with both being in an intra-active state of becoming. This finding challenges conventional studies that view boundaries and boundary objects as relatively static and, like oil and water, immiscible. Our study has also demonstrated that there were specific material-discursive practices arising from the use of the blog in the organization that were performative, intervening and changing the boundaries at which it operated, and being generative of further changes in the organization, such as deploying resources to ensure the promised service level agreements were met.

Our findings extend a previous sociomaterial consideration of boundary objects (Doolin and McLeod, 2012) by highlighting the role of power. In particular, our consideration of a social media based boundary object demonstrates the paradox of the ostensibly democratic nature promised by social media and the mobilization and replication of existing power bases inherent within organizations. The specific material-discursive practices of the blog, in particular subjective expression, has also allowed us to address the call for a consideration of emotion in sociomaterial-based studies (Jones, 2014).

We are aware of a number of limitations of our study, and that these suggest avenues for future research. Despite the insight that can be derived from single case studies (e.g. Walsham, 2006; Lee and Baskerville, 2003 and 2012), additional case studies would provide the opportunity to support, refine or extend our findings and analysis. In order to understand better the intra-action of context and social media boundary objects, the study could be repeated in other public sector organizations, in the private sector, where there may be less focus on hierarchical boundaries and in countries other than the UK. The release of the transcripts of the blog under an FOI request meant that rich detail that would not normally be released was available. However, we are mindful that only the postings of senior staff were released, and that in places we inferred the contributions of other staff from those of the senior staff. Future studies of social media that have access to the full contributions of all users may provide additional insight, particularly issues such as differential use of language

or expression and the mobilization of ‘bottom up’ power. The interpretivist nature of our study is necessarily subjective (Klein and Myers, 1999). Other researchers may have made a different agential cut (Barad, 2003) and hence produced a different view of the use of the blog. However, we have sought to present an explication that is internally consistent and which can act as a starting point for others to interpret and adapt (Orlikowski, 1993).

Future studies should explore social media platforms other than blogs. Such studies could consider collaborative text tools such as wikis or Google docs; online rooms where visual and aural communication is supported such as Blackboard or Glasscubes or more socially oriented platforms such as intra-organizational social networking, e.g. the intra-police use of Twitter (Meijer and Torenvlied, 2014). Finally, our adoption of Alvesson and Sandberg’s (2011) encouragement to challenge the assumptions of extant theory should encourage others to challenge aspects of the extant boundary object domain. As well-being static and inert, inherent assumptions view boundaries in organizations are problematic. Drawing insights from studies of innovation (Macher and Boerner, 2012) or liminality (Van Gennep, 1960; Turner, 1982; Sturdy et al., 2006), new perspectives could postulate the ‘betwixt and between’ of boundaries as highly creative spaces that should be encouraged.

Value to Practitioners and Academics

Our study provides practitioners who are operating or considering the development of an organizational blog with a description of the formation and use in a challenging real-world setting. It is relatively simple and low cost to establish a blog. They appear to offer a panacea for the enduring challenge of developing effective organization-wide communication and knowledge sharing (Blundel et al., 2012), and the notion of rapid experimentation often associated with online media (Van Gelderen et al., 2008) may encourage a headlong adoption of blogs with little reflection. However, this study has highlighted that the blog and the organizational boundaries, and other aspects of the organization, are dynamic and mutually constitutive. Whilst an organization may, like the government department in our case study, choose to adopt a blog in order to engender change, that change may be unexpected. Only certain organizations are subject to Freedom of Information requests, and hence they may not face the unexpected blurring of the internal and external faced by our case study. However, the mutual and ongoing becoming emphasised in our sociomaterial approach, alerts practitioners to the sense that the full implications and impact of the blog cannot be foretold.

Our study is of value to academics in a number of ways. For those interested in the study of boundary objects, it challenges the widespread characterization of static boundaries spanned by inert boundary objects, which like catalysts in chemical reactions are essential but remain unchanged. By drawing on sociomateriality our study has shown that the specific material-discursive practices of the blog allowed it to insinuate itself at the organizational boundaries, with both the blog and the boundaries evolving and becoming over time. For those interested in the sociomaterial perspective, similar to the studies of Schultze and Orlikowski (2010), Wagner et al (2010), Schultze (2014) and Jones (2014), our study provides an example of the use of sociomateriality to reinterpret and theorise a familiar setting. As noted, use of the sociomaterial lens is highly challenging, and hence the application of it to a range of empirical settings will provide valuable insight to other scholars wishing to use this approach to provide novel perspectives and hence insights into the world around us. Our study has also highlighted two areas not explicitly addressed in previous sociomaterial studies, power and emotions. We recognise our exploration of these is brief, but would encourage others to explore how these manifest in the specific material-discursive practices arising from other settings, as well as identifying other aspects that can enrich our exploration of the sociomaterial.

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