ONLINE CHALLENGES TO INSTITUTIONAL EXPERT AUTHORITY: THE CASES OF ENGLISH HERITAGE AND THE ROYAL SOCIETY

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Abstract

Academic experts are increasingly challenged online due to rapid advances in communication technology. Their role as gate-keepers to knowledge is seemingly being usurped, and their authority appears to be undermined by new players, such as bloggers, activists and online communities of practice. This thesis investigates challenges experienced online by two UK expert institutions, English Heritage, the public body with responsibility over historic buildings, and the Royal Society, the national academy of sciences.

Participant observation and qualitative interviews with nine key individuals from these two institutions allowed for a detailed picture of online contests between the experts and their rivals to be built; from social media crises, to attempts by the institutions to wrestle with unfamiliar platforms and establish a rapport with online communities. I used a conceptual framework grounded in Foucault's (1976, 1977) notion of knowledge and power networks, and Bourdieu's (1972) account of the exchange of cultural and other types of capital across fields, to give shape to the empirical data.

The focus in existing literature on the experience of individual researchers online, rather than that of expert institutions misses out much of the public engagement role of the latter, which means that institutions find themselves locked in to contests online where individual experts may avoid them. This leads to different patterns of behaviour not well covered in existing literature. Examining the behaviour of institutional experts therefore allows this thesis to address a gap in current understanding of the ways expert authority can be challenged online.

The key contribution this thesis makes to scholarly debate is the identification of a range of new forms of capital that have far more efficacy in supporting expert authority online than traditional forms of capital like qualifications and number and quality of publications. These new forms of capital include: *algorithmic capital,* determining findability of information; *time capital,* determining the speed of

exchange, and; an online version of *social capital*, determining the success of engagement with online communities.

Being in possession of this new capital online lends an expert or their challenger a new kind of authority that I term *socio-technical authority*. The thesis concludes that this new *socio-technical authority* will accelerate the disruption of the industry of expert knowledge production. It will enable new groups to claim rival expertise and possibly take control of the experts' original role as gate-keepers to knowledge for the general public. However, institutional experts can respond to the challenge by learning to make use of *socio-technical authority* themselves.

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Chapter 1

Introduction and Methodology

> We want the reconstruction of society and the unification of mankind to be achieved, not from above downward by any sort of authority, nor by… accredited men of learning – but from below upwards.
>
> (Bakunin, cited in Ward, 1973, p. 22)

In this moment in history we are witnessing a fascinating reimagining of what it means to be an 'expert', driven in large part by the disruptive effects of online platforms, raising the question how our societies will be changed in the coming years. In 2016 two unexpected political earthquakes reverberated through the West: United Kingdom voting to leave the European Union in June of that year and Donald Trump getting elected president of the United States in November. Despite the varying local characteristics of these events, there were three common trends. Firstly, there was a significant anti-elite sentiment on display on both the left and right sides of the political divide.[1] Secondly, there was a conflation of experts and elite, and, therefore, a rejection of expert analysis of events, captured memorably – and ironically, from an ex-Education Secretary – in Michael Gove's remark that 'people in this country have had enough of experts' (Mance, 2016). Thirdly, subsequent analysis both in mainstream media and in scholarly research identified the disruptive power of the internet and social media as a significant factor in all of these events, whether through better organisation of online campaigns in targeting specific voters, or the spread of misinformation and so-called 'fake news' on social media that has been shown to have helped Donald Trump (Shu et al, 2017; Allcott & Gentzkow, 2017).

[1] As seen in Trump's memorable 'drain the swamp' catch-phrase and in the Democrat Senator Bernie Sanders' constant bashing of Wall Street and the 'one percent'.

This study will explore the intersection of power, expertise and technological disruption as it relates to one particular industry: the industry of expert knowledge production. For the purposes of this thesis this industry can be defined as the collection of expert bodies, universities, academies, research and policy institutions, learned societies, publishers of academic journals and funders of academia, who are in the business of controlling what gets described as 'knowledge', defining what knowledge is of academic quality, producing new knowledge, and training the next generation of academic experts in a process of perpetual self-regeneration (Bourdieu, 1984, 1989). The focus will be on academic experts, rather than, for example, experts employed in industry and the professions, such as lawyers or accountants.

The industry of expert knowledge production is facing an enormous challenge from the wholesale move of the process of knowledge enquiry online. Wikipedia, the crowd-sourced online encyclopaedia, dominates the top results in Google searches and those of other search engines for facts about science and other areas of academic expertise (Bateman and Logan, 2010; Eijkman, 2010; Samoilenko & Yasseri, 2014). This means both Wikipedia and the search engines driving traffic to it, all have an enormous influence on public[2] understanding of key areas of knowledge, such as history or the sciences. Even academics increasingly use Wikipedia for pre-research, the initial phase of background reading before determining the focus of an original research project (Eijkman, 2010). Search engines like Google are a source of disruption both in combination with Wikipedia and in their own right, as a gateway to a plethora of alternative sources of information not controlled by academic experts. Pew Research Centre's much referenced survey of internet usage in the USA, for example, has shown that 72 per cent of Americans go online for health-related information and of those millions of people, 77 per cent turn to Google first when they have a health-related question (Fox & Duggan, 2013), fundamentally affecting people's relationship with doctors as

[2] I am aware that the term 'public' is not simple to define and there is considerable literature on public engagement with science that challenges the existence of the 'public' as a unitary category with similar needs and behaviours (cf Gregory & Miller, 1998). However, it is outside the scope of this study to look in detail at all aspects of public engagement with science, so for my purposes the broadest and most inclusive definition of the 'public' as non-experts engaging with content online will suffice. Where I want to draw attention to behaviour of a sub-group of the 'public', I will make this clear in the text.

custodians of all knowledge about their health and controllers of decision-making about their well-being.

The effect of this change is that experts are increasingly seeing their traditional role as being gate-keepers to the 'correct' knowledge being challenged by technology. One sign of this is that traditional libraries are closing both in Europe and in the USA, and even university library services are under pressure to stay relevant to students' changing research behaviour and increasing reliance on search engines (Regalado, 2007; Rowlands et al, 2008). The gate-keeper role of experts is even more conspicuous in its failure on social media platforms such as Facebook and Twitter, with the viral spread of what is now universally known as 'fake news'. This is an issue that crosses over from the political to the scientific space when the topic of misinformation is a controversial area in the policy/science interface, such as genetically modified (GM) food, climate change or vaccination. Where in the past academic experts may have expected to be able to control the message on these technical areas, or at least offer a clarification to a story, social media makes such an intervention very difficult. The issue is exacerbated by the hidden biases of the algorithms selecting what appears at the top of the stream of updates on a platform such as Facebook or Twitter, creating the possibility of a 'filter bubble' effect (Pariser, 2011), where people can be locked into content of a homogenous nature due to decisions being made by the algorithm without their knowledge. This can contribute to a polarisation of debate on ideological or controversial issues, with people receiving only opinions that reinforce their existing positions and prejudices and not being exposed to alternative points of view (Allcott & Gentzkow, 2017).

By examining the authority of academic experts and how that authority is challenged online I will focus on two specific institutions: English Heritage[3] and the Royal Society. The first, English Heritage, is a non-departmental public body (NDPB) responsible for England's built heritage with a statutory role in listing[4] and planning decisions connected to historic buildings, monuments and archaeological sites.

[3] Note that English Heritage has split into two separate organisations since the interviews were conducted. The statutory body that looks after the listing process and protects the historic environment has been renamed Historic England, while the department that runs the over 400 historic properties, including Stonehenge, has become an independent charity, inheriting the name English Heritage.

[4] 'Listing' and 'the List' refers to the statutory National Heritage List for England of historic buildings and monuments that have extra protections against harmful development. They split into Grade I, II* and II, with legal protections strongest for Grade I buildings. See www.historicengland.org.uk/listing/the-list/

English Heritage provides funding to other academic institutions like Universities and heritage groups and has in-house research departments in areas such as archaeology and conservation of historic buildings, and a policy department explicitly engaged in championing the views of the sector with government. This triple role of regulation, funding of research and conducting research itself, gives English Heritage a leadership role in its domain of knowledge. Its custodianship of over 400 historic properties such as Stonehenge and Dover Castle open to the public, and additional resources such UK's biggest archive of images of historic buildings and aerial photography collections, also means English Heritage sees public engagement as a key part of its responsibilities.

The Royal Society, the second institution selected as subject of this research, is the UK's national - and the world's oldest - academy of sciences, covering every domain in natural sciences from physics, astronomy and mathematics, to chemistry, biology, and other life sciences. The Royal Society has a clear role as champion of its field of natural science both in the UK and internationally through, among other activities, its world renowned fellowship programme for scientists, and its policy work in advising the UK government on scientific matters. It also has a strong public engagement role through its communication and publishing activities and through running the Royal Society Summer Exhibition aimed at engaging the general public with science.

There are significant similarities between these institutions: they are both world leading academic organizations which claim authority on the basis of their expertise. They are both acknowledged champions of knowledge in their respective field, with active public engagement programmes. There are also key differences between them. English Heritage specialises in humanities based expertise, whereas the Royal Society's focus is natural sciences. Another key difference is English Heritage's legal and regulatory role in the planning and listing systems, for which the Royal Society has no equivalent.

Situating the Argument

Sociological conceptions of the virtual or online world have matured from an initial stage of fascination with all the ways the virtual was different and separate from the

concrete experiences of the offline, ‘real’ world (Castells, 1989), to the insight that the online is entangled with the offline, via complex interconnections of experiences between and within them (Bauman, 2007). However, the idea of a boundary between the offline and the online worlds has still heuristically persisted in literature due to its usefulness for comparative purposes, albeit this boundary is seen as conceptual, porous and flexible. In this thesis I will follow suit and adopt the same convention of the online/offline conceptual dichotomy, but, as my argument develops, I will add more and more nuance in explaining the precise nature of the entanglement between online and offline and what it means for institutional expert authority.

Researchers have focussed on many different communities operating across the porous conceptual boundary between the online and the offline, from college students leading lives at least in part mediated by the online experience (Dennen & Burner, 2017), to political interest groups advocating new conceptions of online democracy (Dahlberg, 2001). There have also been a small number of studies on the online experiences of academic experts themselves (Nistor, Baltes and Schustek, 2012). What has been missing in literature, however, is a comprehensive analysis that defines the mechanics of how institutional academic experts relate and respond to those individuals and communities who claim rival expertise online and challenge the experts across that online/offline world boundary.

One reason for the gap in existing literature is that, in studying the exercise of expert authority online and challenge to it, researchers hitherto have focussed their attention on individual academics and their experiences in the context of a single platform. There are excellent studies of experts engaging with Wikipedia (Eijkman, 2010; Hartelius, 2010; Samoilenko & Yasseri, 2014), Google (Harzing, 2013; Li, 2013) or patient community websites (Eysenbach, 2007; O’Connor, 2010). However, in focussing on a single platform these authors were not in a position to draw broader conclusions about the full diversity and scale of challenge academics can meet online. In research into online communication by groups other than academics, it has become routine to criticise single platform studies. One reason is that such studies run the risk of missing differences in behaviour caused by different technological affordances (Weltevrede, Helmond and Gerlitz, 2014). Another reason is that they miss patterns of communication behaviour that sit above individual

platforms, where individuals use multiple platforms at the same time and specialise, by deploying them for different purposes. This behaviour is referred to in literature as *media multiplexity* (Haythornthwaite, 2005).

The focus in existing literature on the experience of individual researchers is also problematic. To fully explore the issue of the experts' role as gate-keepers to knowledge being challenged online, any individual academic chosen would have needed to have an active role in public engagement and championing a particular domain of knowledge, which is rare. Even where individual researchers adopted a role as gate-keepers in their domain of expert knowledge this was done on a voluntary basis, meaning that any challenge to them online could be dealt with by simply avoiding the encounter. The cost of failure to respond to a challenge online for individual academics is rarely high enough to motivate continued engagement. However, as has been argued by Regaldo (2007), at institutional level, challenges to the gate-keeper role of experts cannot so easily be avoided. For example, if the Royal Society is unable to be authoritative when advising government on the right policy in connection with climate change or fracking, there are consequences for the public at large. Indeed, dealing with challenges to their authority online is an important and an unavoidable activity for both English Heritage and the Royal Society *precisely because* both are world leading institutions with a reputation to protect and an official remit to conduct public engagement. It is clear, therefore, that the area of cross-over between expert knowledge and power to influence society, with very few exceptions, can *only* be examined by focussing on expert institutions, something currently missing in existing literature in connection with the online experience.

In focussing my research on institutional expert authority, I do not mean to suggest a significant contrast between institutional academic experts and individual academic experts in the way expert authority works. Rather, I see institutional academic expertise as a subset of academic expertise in general, sharing the features of the latter that I will fully detail out in Chapter Two, but with the additional feature of a heightened need to act as a gate-keeper and to carry out engagement with the public. It is this additional feature that is conceptually interesting for me because it means that institutional experts are more likely to sustain engagement online even when their authority is being challenged. Throughout the thesis I will deploy a

number of terms to describe expert authority. Here I want to define clearly how they relate to each other: ‘expert authority’ or ‘academic expert authority’ refer to the authority of academic experts; ‘institutional authority’ or ‘institutional expert authority’ refers to the subset of the former which is deployed when academic experts act in an official capacity on behalf of an institution. Additionally, ‘offline expert authority’ refers to the academic expert authority when I am drawing a contrast between traditional academic experts, including institutional experts, and their online challengers who claim a rival kind of expertise.

In summary, this study will examine expert authority by focussing on institutions who claim to have world-leading expertise in a given area of academic knowledge, using English Heritage and the Royal Society as case studies. The study explores how this authority is challenged and forced to evolve online by looking across a range of different online platforms: Google, as an example of an algorithm powered search engine; Wikipedia, as an example of an online community based knowledge production platform; and Facebook and Twitter, as two popular social media platforms. The approach will be to focus on expert institutions rather than individual experts, limit the scope to areas where those institutions have a public engagement and gate-keeper role in their domain of knowledge and look across multiple platforms to account for the *media multiplexity* effect. The institutions’ engagement online will be analysed via looking at surrogates who deploy the institutional voice of the organisation they are representing and then analysing how these surrogates react to challenge online, which tactics they adopt and what motivates them. This approach will allow for a fuller understanding of how institutional experts utilise their authority online and how and why that authority is challenged than is available in existing literature. The analysis will be conducted by looking at two interconnected areas: the technological affordances and biases of the different platforms, which influence the ability of experts to utilise their authority online; and the cultural and social factors in online communities of practice that incline these communities to challenge academic experts. I will now describe each of the two areas in a bit more detail.

The concept of affordance first proposed by Gibson (1977, 1979) and then developed and applied to interfaces by Norman (1988, 1999) can be considered as a

means of reconciling the competing claims of Technological Determinism and the Social Construction of Technology schools of thought. Affordances can be understood as either enablers or constraints provided by technology to the socially and culturally determined behaviours of the technology's users. There has been significant literature looking at the affordances provided by the design of the user interface of online platforms (Norman, 1988, 1999), or by the real-timeness of information up-dates (Weltevrede, Helmond and Gerlitz, 2014). However, there is a gap in literature as far as the influence of affordances on the behaviour of specifically experts online is concerned. Very few studies have focussed on this explicitly. A key contribution of this thesis is analysing whether experts trying to deploy their authority online are affected by the type of affordances identified in studies of other non-expert users (cf. McVeigh-Shultz & Baym, 2015; boyd, 2010).

This study will examine algorithms powering everything from search engines like Google to social media filtering on platforms like Facebook and Twitter, as a type of technological affordance (boyd, 2010). A particular area of focus will be the effect of biases inherent in these algorithms on how successfully institutional experts are able to deploy their authority online. There is a lively debate on the impact of algorithmic biases and to what extent it can be controlled for (Harzing, 2013; Hazan, 2013; Barocas & Selbst, 2016). This study expands the debate about the impact of algorithmic bias into the arena of expert knowledge production, demonstrating the scale of the challenge hidden biases pose to expert institutions' authority in areas as disparate as search engine results, social media metrics and citations of academic papers.

Directly linked to the challenge to experts in their role of gate-keepers enabled by algorithms, is the rise of alternative sources of expertise online. With the digital technology enabling almost anyone in the word to become a publisher of knowledge content as long as they have access to a computer or mobile phone and a network connection, the era of one-to-many communication of knowledge controlled by highly educated elites is being disrupted by a many-to-many communication of knowledge between peers in what some researchers see as a triumph of post-modernism over modernity (Turkle, 1995; Poster, 1999). Eysenbach, (2007) describes the gradual replacement of the *intermediation* of experts with the public seeking their advice, with

what he calls *apomediation* of peers providing advice to each other in online fora. The example Eysenbach gives is the rise of patient websites and social media sites dedicated to supporting each other in the treatment of, and the living with, a particular disease, particularly where that disease is a chronic one.

In many respects this swelling of ground up crowd-sourced knowledge provided by bloggers, social media activists and online communities is read by many (cf. O'Neil, 2009), as the embodiment of what the revolutionary Mikhail Bakunin (cited in Ward, 1973) called for in the quotation at the start of this chapter: a 'below upwards' generation of knowledge. The prospect of this expertise of the masses is welcomed by some commentators such as Clay Shirky (2010) who writes rhapsodically about releasing and then making productive use of the 'cognitive surplus' of the general public to create art and knowledge. On the other side of the scale, many scholars are concerned about the quality of such knowledge being generated by millions of under-trained hands online (cf. Regaldo, 2007). In between, are those researchers (cf. Black, 2008) who are cautious about issues such as quality but still advocate engagement with the online communities of knowledge production, purely because, they argue, that is whom the public increasingly turns to. If the experts do not engage, they will forego the ability to help improve the quality of the information the public consumes.

There is a significant gap in existing literature, however, with respect to being able to compare the very different methods of expert knowledge production deployed by institutional experts, on one hand, and online communities of practice, on the other. The lack of an established field of study able to advance an account of the relationship of institutional experts and their online challengers and situate them in their respective positions in the field of knowledge-power, has made analysis of their respective activities problematic. The majority of attempts made so far at comparative analysis did one of two diametrically opposite things. Some researchers started their argument by accepting the view point of the institutional experts and used the categories of *discourse* in the offline field, such as accuracy or completeness, to assess the contribution online challengers were making to expert knowledge production (cf. Wilson and Likens, 2015; Samoilenko & Yasseri, 2014). Alternatively, other researchers did the opposite and used categories of *discourse* important in the online world, such as share-ability or popularity, and applied them to

content produced by institutional experts (cf. Shirky, 2010). The inevitable conclusion being that the side whose viewpoint and *discourse* were used for the assessment ended up being judged superior as the result of the assessment, ignoring the obvious circularity of that logic.

What is missing, therefore, is an approach that does not privilege either *discourse* from the start, a way of comparing the offline and online contributions to expert knowledge production that does not accept the categories of either as a starting point. This study makes a key contribution by filling this gap in the debate. It does so by mapping the relationship between offline expert institutions and their online challengers against a conceptual framework of knowledge-power, fields and capital, derived from Foucault (1976, 1977) and Bourdieu (1972). By doing so, this study sheds light on the hidden dynamics of how authority translates between the offline and the online fields of expert knowledge production.

Building up from these two interconnected areas of investigation, the central argument of this thesis is that we are witnessing a period of transition from one particular mode of understanding the nature of experts, knowledge and authority, to another. Foucault (1976, 1977) described this wholesale paradigm shift as a change of *Episteme*, a time when a new *discourse* about what gets to be defined as expert knowledge is created. The expert institutions' traditional role as gate-keepers of knowledge and being the ones who get exclusive rights to define the *discourse* around it, is being usurped by those actors who have accrued a new type of authority better suited to the new (digital) *Episteme*. This *socio-technical authority* is grounded in new types of capital that experts will need to acquire, capital that is tied intimately to the structure and reality of that environment, what Bourdieu (1972) calls *doxa*. This includes, what I identify as *algorithmic capital*, *time capital* and online *social and cultural capital*.

Online actors who accrue *socio-technical authority*, can not only claim rival expertise in the online field, but increasingly challenge experts in the offline field itself. However, the argument is not that online actors such as bloggers or online communities of practice like Wikipedia editors will automatically dominate in the new *Episteme*. There is nothing preventing expert institutions like English Heritage and the Royal Society gaining *socio-technical authority* and rising to the challenge of

competing for control of the new *discourse* themselves. The argument is rather that the rules of the game have changed and the institutional experts' existing authority will no longer automatically win out, without them putting in the effort to understand and adjust to the demands of the online world.

Methodology

In examining the dynamics governing the challenge to institutional expert authority online, this study will carry out its analysis along three axes. The first axis compares and contrasts the online experiences of two institutions in differing disciplines of academic expertise: English Heritage in the humanities, and the Royal Society in the sciences. The second axis of analysis is in comparing and contrasting experience across four different platforms: Google, Wikipedia, Facebook and Twitter.[5] The third axis of analysis is in comparing and contrasting views of interviewees on a number of discrete incidents of when the institution's authority has been challenged online. The table in Appendix 1 maps out all the incidents that emerged during the interviews against platform, institution and interviewee.

A decision was taken early on to adopt a qualitative method of research rather than a quantitative one because it became clear from existing literature that the nuance of behaviour and motivation of key subjects online – whether members of online communities of practice or institutional experts engaging with them – would be crucial in understanding the dynamics of challenge to expert authority. A qualitative research method of conducting interviews with subjects who have direct experience of online engagement and challenge would produce the kind of rich data necessary to understand human behaviour and motivation and leave space for inductive analysis of ideas and concepts emerging from the interviews themselves (Seale, 2004; Byrne, 2012).

The interview approach enabled a rich case study (Platt, 1992) to be built of each of the two institutions, for further analysis. The case study approach, connecting individual incidents into an overall narrative of how challenge to authority is dealt with

[5] It is worth noting that these four platforms are amongst the most visited websites/platforms in the world. In March 2018, Google was ranked 1st, Facebook 3rd, Wikipedia 5th and Twitter 13th on Alexa's '500 Top Websites' list, by traffic (Alexa, 2018).

for the two organisations was a very useful approach for tying together what would otherwise have been a collection of disparate interviews. The rationale for choosing the two institutions from contrasting fields of expertise, the humanities, in the case of English Heritage, and the sciences in the case of the Royal Society, was to allow comparison across the two case studies of challenge to expert authority online. A secondary motivation was to validate the findings from English Heritage interviews to make sure my role as participant observer did not unduly bias the results I was getting. That is why the Royal Society interviews were conducted in 2014, two years after the English Heritage interviews, which allowed for some initial insights from the analysis of the English Heritage interviews to be tested with the Royal Society.

As discussed earlier in the Introduction, the focus of the study is on institutional expert authority rather than the authority of individual experts. However, institutions communicate online *via* individuals and these may or may not be academic experts in their own right. This adds a layer of complexity as many individuals employed by English Heritage or the Royal Society may be tweeting, using Facebook or editing Wikipedia in an academic domain of interest to this study, and yet not be representing the official view of English Heritage or the Royal Society. It is important to clarify then that, in order to capture the institutional rather than personal authority, this study focused on those individuals within English Heritage and the Royal Society who engage in online debate with the general public or with rival claimants to expertise in an *official capacity as the representative of their institution*. Therefore, only such official online spokespeople were selected to be interviewed. In both English Heritage and the Royal Society, three kinds of roles typically carried this out:

(i) communications professionals, often those in control of official institutional channels like the Royal Society Twitter feed or the English Heritage Facebook page;
(ii) senior leaders like top directors of each institution who might engage online with their own voice but in their executive role of representing the institution;
(iii) online platform consultants hired to achieve a goal, like a Wikipedia-in-residence employed by the Royal Society.

These three types of role were distinguished from other staff who may have been engaging online in their personal capacity or those carrying out other activities online on behalf of that institution, such, for example, as advertising and marketing, or selling goods and services.[6]

It is important to note that, typically, only the second group, the directors of the institutions, were leading subject-matter experts themselves. The other two groups were used for their communication and platform (such as Wikipedia) expertise.[7] However, all three roles would engage with their in-house expert departments for a briefing about a particular point of debate before or during their engagement online in an institutional capacity. For example, staff handling the official Twitter channel of both English Heritage and the Royal Society, were not experts themselves, but they relied on briefings from their in-house experts in running social media communication campaigns. As will be discussed in Chapter Five, their role as speaking on behalf of the institution made them conscious of conveying facts correctly, related to the field of expertise of that institution. That meant detailed briefings from in-house experts which these communications experts then broadcast online.

In terms of sampling, nine individuals were interviewed in total, six from English Heritage and three from the Royal Society. Of the six English Heritage interviewees, five were women and one was a man. Of the three Royal Society interviewees, two were men and one was a woman. There was a spread across the three types of official spokespeople – communications team member, expert leader and consultant – and a spread in the seniority of roles, but with majority employed in communications roles and of a managerial rank or above (see Table 1).

Table 1: list of interviewees and the breakdown of their roles

Subject Code	Subject type	Approximate area of work/interest	Year of interview
EH1	Communications staff	A manager of English Heritage	2012

[6] In English Heritage's case the goods and services for sale might be membership subscriptions, tickets to heritage sites, books and branded souvenirs. In Royal Society's case, similarly, these could be tickets for events such as the Summer Exhibition, and, also, books and souvenirs.
[7] Though often even the communications staff in these expert institutions would have had a university degree in a relevant subject

EH2	Communications staff	A member of staff at English Heritage	2012
EH3	Communications staff	A director of English Heritage	2012
EH4	Communications staff	A director of English Heritage	2012
EH5	Leader with expert knowledge	A director of English Heritage	2012
EH6	Communications staff	A manager at English Heritage	2012
RS1	Communications staff	A manager at the Royal Society	2014
RS2	Communications staff	A member of staff at the Royal Society	2014
RS3	External expert	In-house Wikipedian at the Royal Society	2014

The English Heritage interviews took place first, in 2012, with individuals selected on the basis on my internal knowledge of the structure of the organisations and which roles acted as official spokespeople, taking advantage of my role as participant observer. As will be described more fully in the *Ethics, Theory and Praxis* section of this chapter, further down, care was taken not to select individuals I directly line managed for the interviews, to avoid undue bias. The Royal Society interviews were conducted in 2014, with interviewees in the desired official spokespeople role selected on the basis of my external awareness of the Royal Society as an organisation I often engaged with in my then new role of Head of Digital Development in the Wellcome Trust, an organisation that has strong relations with the Royal Society.

All the interviews were conducted at the workplace of the interviewees in the English Heritage's or the Royal Society's offices, by arranging an appointment with the interviewee in advance. Typically, there would be an initial meeting and/or exchange of emails ahead of the interview, explaining the research project and sending them

the list of questions in advance (see the list of questions in Appendix 2). In the course of the interview, this prepared list of questions was followed, though in a semi structured way, enabling interviewees to range wider than the question list and to encourage the potential for unanticipated insights and ideas to emerge (Byrne, 2012). The questions therefore were used more to give an overall framework, and ensure that some key themes were checked with each interviewee from both English Heritage and the Royal Society to allow for later comparison between them. Permission was also sought from all participants to record each interview on my iPhone for ease of recall and transcription.

Interesting themes or observations emerging in one interview were cross-checked in other interviews building up a more complete picture. This was particularly important because a discrete number of incidents where the institution's expert authority was challenged recurred across multiple interviews. Therefore, it was important to establish if interviewees had similar perspective on a given incident. For example, the 'Dale Farm incident' where a local council was trying to move on a group of travellers from land they, according to the council, were occupying illegally, was mentioned in the very first interview at English Heritage. It was identified as an important incident because it had national media impact but also because English Heritage was involved when the activists protecting the travellers' rights made an application to list a gate on the occupied land. It became apparent from the first interview that the incident was seen as a milestone within English Heritage in how social media affected its work. I was then able to bring this case up with all other English Heritage interviewees, and a number of interviewees were able to shed further light.

After all the interviews were complete, the interview data was transcribed and coded and *thematic analysis* (Rivas, 2012) was carried out to organise the content into key elements, which led to a dataset of just under 700 textual elements, whether direct quotations from interviewees, or key summary points. The thematic analysis of these 700 textual elements produced a wealth of information about how the two expert institutions, English Heritage and the Royal Society, engage with the public online and respond to challenge. Examples of authority being deployed and challenged online mentioned in the interviews were then followed up by looking at the original

source material of the social media conversation transcripts, where available (see Appendix 3), and any mentions of the incident in question in mainstream media. This extra methodological step was taken to validate some of the statements in the individual accounts and add further context and detail.

Specific themes were drawn out from the dataset, which in turn were grouped into overarching meta-themes during a further iteration of thematic analysis. The themes and meta-themes were selected through a combination of inductive and deductive approaches. An initial set of themes were deduced from a combination of literature review and my role as a participant observer (Walsh, 2012) working in the English Heritage web team. These initial themes spanned concepts such as 'findability', influenced by concerns about algorithms and index authority raised by O'Neil (2009), and expert 'identity' raised by Shirky's (2010) focus on the meaning of expertise being redefined online. Further themes came from the evolving conceptual framework grounded in the theories of Foucault (1976, 1977) and Bourdieu (1972), particularly their insight into how authority was being contested in the field of knowledge-power and how different amounts of capital accounted for the position of players within hierarchical fields. This generated a series of themes connected with 'competition' and 'challenge' and 'symbols of authority'.

The initial themes arrived at through deductive reasoning informed the questions asked during the interviews. The rest of the themes emerged inductively through the process of coding the interview transcripts and thereby finding interesting topics not originally arrived at deductively (Rivas, 2012). There was an element of a *grounded theory* approach (Seale, 2012) in that further analysis of existing literature was carried out *after* the results of the English Heritage interviews were already known and *before* starting the Royal Society interviews, allowing for deduction of some additional themes to inform the questions asked of the Royal Society. The meta-themes were then arrived at through a further iteration of inductive reasoning, building up from the full set of specific themes at the end of both sets of interviews.

Ethics, theory and praxis

To enable the ethical conduct of research on human subjects, consent has been sought from all participants and both sets of interviews were approved by Brunel University, under its ethical guidelines. All interviewees are anonymised when referred to in the study, though the names of the institutions and general descriptions of their roles (though not specific job titles) will be used as context, where necessary.

Potential conflict of interest needs to be highlighted during the first set of interviews at English Heritage in the view of my position, originally as a senior manager – Head of New Media – within English Heritage at the time: how can objectivity be ensured in the answers of interview subjects who are more junior than I, or vice versa, how can probity be ensured in questioning staff who are my seniors – will there be a risk of self-censorship of results?

A number of mitigations have been put in place to make sure there was no undue influence of my internal English Heritage role on the integrity of the research. Firstly, clearance was obtained from the ethics committee within Brunel University to conduct the English Heritage interviews. Secondly, prior clearance had been obtained in writing from senior directors at English Heritage aware of this research project that allowed me to proceed with the proposed method of gathering data. Thirdly, interviews in all cases were with members of staff at English Heritage who were not directly line managed by me. In the one case (interviewee EH2) where the person was in my broader team, the questioning pertained to an area (Wikipedia publishing) where the person was working on secondment *outside* my team. Fourthly, in all interviews with more junior staff in English Heritage, it was made clear that the research project was not related to my official duties and that they did not have to be involved at all, if they did not feel comfortable, or could ask to skip or stop any line of questioning they did not feel comfortable with. Finally, I have since left English Heritage to take up a position at the Wellcome Trust, which gives me the necessary independence in analysing the results of the English Heritage interviews.

My status as Head of New Media at English Heritage, one of the subject organisations in my research, has implications far wider than just the narrow focus of research ethics. That role and the subsequent roles as Head of Digital Development

and currently, Head of Data and Innovation, at Wellcome Trust, make me an actor in the fields I am studying. Not just a participant observer (Walsh, 2012), but a participant observer with significant influence in the field. Particularly the current role, which I assumed after the interview phase was complete, and which I still hold at the time of writing, carries with it a degree of influence that needs to be accounted for. The reason for this is that Wellcome Trust is a foundation whose primary activity is philanthropic grant giving in support of scientific research both in biological and social sciences. As of 2016, Wellcome Trust supports as much as a fifth of all academic research in the UK. As Head of Data and Innovation, my role is to support the Wellcome Trust executive team in understanding how data science and new technology can help deliver the organisation's strategy and mission.

From the sociological perspective, being an influential participant observer in a field holds both disadvantages and advantages. As Walsh (2012) points out, any combination of observation and participation[8] carries with it different potential biases. Acknowledging the inevitability of bias helps to bring its potential impact to light and account for it. Beyond this, many scholars, such as Bauman (1989) and philosophers in Bauman's school of thought such as Tony Blackshaw (2008) see positive value in performing philosophy and sociology as praxis and being actively engaged. Bauman (1989) viewed much of sociology as stuck in the past addressing issues that have less relevance in what he defined as 'liquid' modern life (Bauman, 2007), a life which is less fixed by structures and ideologies:

> Dated concepts in sociology – class, community, gender, 'race', society, youth and so on and so on – are now unaccompanied by actual social phenomena and new social phenomena are unaccompanied by appropriate concepts… Bauman's sociology unashamedly confronts the detachment associated with orthodox sociology in its cold pursuit of the past by interpolating passages of everyday life with the personal input of the sociologist. (Blackshaw, 2008, p. 376)

Sociology as praxis is an approach designed to resolve the time frame paradox between change in society and its delayed sociological categorisation. Blackshaw

[8] Walsh (2012) defines four different combinations: *complete observer*, *observer as participant*, *participant as observer*, and *complete participant*, with a gradual increase in depth of involvement. At the observer end of the scale, the risk of bias is one of *ethnocentrism*, at the participant scale it is of 'going native'.

(2008) encouraged sociologists to intentionally mix with their subjects so they could not only observe but 'feel' their full experience. Without this deep integrated praxis, it was not possible to develop correct insights and 'appropriate concepts' suitable to the world as it exists now (Blackshaw, 2008). My involvement in Stonehenge and Listed Building issues while at English Heritage or in the 'research of research' issues while now at Wellcome Trust, is an example of 'lived praxis'. However, this leaves unresolved the equivalent of Heisenberg's uncertainty principle: how can you both enact change and observe it?

It is clear to me that I am an actor in the field I am observing, whether I wish it or not. On the other hand, there seems to be a value in focussing the narrative of my thesis and the lens of my 'analytical eye' onto what my interlocutors said and did, rather than what I said and did. I can acknowledge my involvement and even use it as a source of 'second opinion', of another perspective, on the events my interlocutors might be describing. However, I resist the temptation of challenging the views of my interlocutors after the interviews, when they have no ability to respond. Where there are points of controversy, or I think I have relevant insight, I have included the question in the interview itself, and faithfully attempted to capture the answer as given.

In this respect, I follow Pierre Bourdieu's (1972) rule of *reflexivity* as a sociologist. Bourdieu's approach was to acknowledge that the mere interaction between the researcher and the subject has an effect, changing what is being observed. Therefore, a researcher has to constantly examine their own bias during the analysis of results by turning whatever conceptual apparatus they constructed to explain what they observed, on themselves as an actor in the field. This is something I explicitly did throughout my analysis and the construction of my argument, and where relevant I make note of this in footnotes throughout the thesis and then address it more comprehensively, with the full knowledge of the results of my analysis, in the Conclusion chapter.

Structure of the thesis

The following chapters discuss how the authority of expert institutions is challenged online by communities of practice with a rival claim to the role of being producers of expert knowledge and its gate-keepers for the wider public. The chapters can be separated into two parts, the first part, comprising Chapter Two, is largely theoretical and develops a framework to analyse how expert authority is strengthened and sustained in a field of expert knowledge production by accumulating different types of capital. In the second part, comprising Chapters Three to Six, I go on to analyse the two case studies built up from the results of participant observation and qualitative interviews at English Heritage and the Royal Society and build up my argument.

The Literature Review in Chapter Two will define the key terms of the debate, *authority* and *expertise*, with reference to a third term, *power*, by considering the evolution of these terms in relation to some key 20th century thinkers, from Weber (1922) to Foucault (1976, 1977) and Lukes (2005). *Authority* will be defined as a subset of *power*, a type of *power* that is perceived by those it impacts as legitimate. The term *expertise* will, in turn, be defined as a subset of *authority*, one that is wielded by experts. Specifically, an expert's authority will be defined as a combination of Weber's (1922) *charismatic authority* and the *legal-rational authority* lent to the expert by their position.

I also establish that, in the Foucauldian sense, an expert's authority is always contested within the network of power, because there is no absolute – epistemically sovereign – grounds from which to claim that their position is the only valid one. Nonetheless, the expert's ability to control the parameters of the *discourse* weights the contest in their favour. This advantage only lasts for as long as the *Episteme* favouring the expert persists. When a new *Episteme* arises, the advantage can disappear and the very definition of who are experts and who are not, is revised.

Having defined what is meant by power, authority and expertise, the Literature Review will then draw on the work of Pierre Bourdieu (1972) to advance an original conceptual framework by marrying Bourdieu's concepts of *field*, *capital*, *doxa* and *habitus,* with Foucault's (1976, 1977) idea of the knowledge-power network. The

chapter will conclude by considering current literature on online communities of practice, who are increasingly challenging the experts for the role of being gate-keepers to knowledge, identifying gaps in that literature that the thesis seeks to address.

The analysis of the findings of my qualitative research conducted through a combination of participant observation and interviews with English Heritage and the Royal Society, comprises of Chapters Three through to Six of the thesis. The analysis interweaves the findings of empirical work with pertinent points of debate in the literature, with the higher-level objective of explaining the dynamics of challenge to expert authority online. Although each chapter will focus on a particular area of debate, I will seek to sustain and build up a conceptual narrative arc across all the chapters of analysis, so that the argument at the end of Chapter Six brings together all the elements developed in preceding chapters. Chapters Three to Five will each focus on specific online platforms: Wikipedia (Chapter Three); Google (Chapter Four); and two social media platforms, Facebook and Twitter (Chapter Five). In each chapter, the analysis will be broadened out from the single platform to make a generalised contribution to the discussion being advanced.

In the first chapter of analysis, Chapter Three, Wikipedia will be considered as a microcosm of how institutional expert authority is challenged by online communities of practice that claim their own expertise. English Heritage's use of Wikipedia will be analysed to identify the precise factors that make the challenge to institutional experts all but inevitable. The experiences of an English Heritage editor attempting to make changes to Wikipedia will then be compared and contrasted with the Royal Society Wikipedia engagement, where the main actor is an in-house Wikipedian, i.e. a native of Wikipedia's community of practice. I will show that the factors determining challenge are due both to technological features of Wikipedia and to the social-behavioural norms of the community of Wikipedia's editors. At the end of this chapter I will be in a position to detail the principal aspects of the acquisition of new types of capital, such as *time capital*, *projected capital* and online *social* and online *cultural capital*. The dynamics of competition for knowledge-power will be highlighted, demonstrating the differences between the offline field and the online field. Apart from outlining the beginnings of an argument that will be further developed through the rest of thesis, the main contribution of this chapter is to define a key new concept

of *democratic levelling*, which negatively affects expert authority online, encouraging expert opinion to be challenged.

In Chapter Four the focus of the analysis will be on algorithms, which determine the findability of content institutional experts care about via search engines, and the shareability of it on social media platforms. The Fracking Report case from the Royal Society interviews and the Stonehenge and Listed Buildings Online cases from the English Heritage interviews will be considered, and this empirical evidence will be used to define the concept of *algorithmic capital*. A number of different types of bias affecting algorithms will be identified both from literature and from the interviews conducted. A key contribution to scholarly debate in this chapter is a reworking of Winner's (2009) concept of *technological somnambulism*, taking account of affordances of online interfaces and the effect of internalising algorithmic biases. By taking the concept of *technological somnambulism* in a new direction and by merging it with Bourdieuan concepts of *doxa* and *habitus*, I am able to identify the mechanism through which aspects of the online field can influence the offline field of expert knowledge production.

In Chapter Five, concepts such as *time capital* and online *social capital* will be further developed to show how they explain the effect of the speed of communication – what Madrigal (2013) calls the *Stream* – on institutional expert authority. The Dale Farm and the Nelson mosque incidents will be used to explain the enormous pressure institutional experts feel when dealing with a fast-developing social media crisis scenario. The Chapter concludes by analysing how the concepts of the *privacy paradox* and *context collapse* affect the ability of expert institutions to communicate via social media channels, connecting them for the first time, as far as it is possible to tell, to the concept of *technological somnambulism*. This connection demonstrates how aspects of the online world persist across platforms, from search engines to social media.

In Chapter Six, the different strands and ideas in the thesis will be brought together and a significant intervention in scholarly debate on expertise will be made by proposing the new concept of *socio-technical authority*. This new type of authority is shown to be able to translate between the online field and the offline field of expert-knowledge production, enabling actors with significant online capital to be influential

in the offline field. The concept of *socio-technical authority* can be used to explain the enormous changes happening to the whole field of academic expertise under the twin pressures of fast-developing technology and human behaviour changing alongside it. Such is the scale of these changes that I will conclude the chapter and the whole thesis by contending that what we are witnessing is the gradual transition to what Foucault (1969) would call a new *Episteme*, one characterised by a *Will to Capture Attention*.

Finally, Chapter Seven will summarise the key findings of the research and analysis and offer some recommendations for the future. I will also take the opportunity to reflect on how one of the key concepts emerging form my analysis – that of *time capital* – is pertinent to my own experiences as a participant observer and actor in both the online and offline fields of expert knowledge production.

Chapter 2

Challenges to Expert Authority online: a Literature Review

> ‘Having reach and communication is not the same as being an authoritative expert.’ (English Heritage interviewee EH4, interviewed in 2012)
>
> ‘Authority is being the place that people come to, governments come to, and decision makers come to when they want advice on a particular area.’ (Royal Society Interviewee RS1, interviewed in 2014)

Introduction

In the early days of sociological engagement with the internet and the rich online world it enabled, when theorists reached for a conceptual analogy to encompass what they witnessed they often turned to Deleuze and Guattari’s (1970) idea of the rhizome, a centreless, organic, ever-growing and evolving space. This was contrasted by Deleuze and Guattari with a rival arboreal conception of social space, where there was hierarchy: a root, a stem, and a branch. Commentators such as Hardt and Negri (2000) liked the rhizome because it both seemed to mimic the topology of what they saw as a centreless internet, and also to encapsulate what they felt was emerging in the online communities populating it: freedom, egalitarianism, libertarianism, a kind of refuge from the hierarchical structures and constraints of the ‘real’ offline world.

However, an alternative view rooted in observable behaviour soon started to challenge these assessments. The internet and World Wide Web may have been like a rhizome in that they did not possess one centre, however, scholars such as Barabasi (1999) showed that in another way they were unlike the rhizome: the

topology of the World Wide Web was not uniform, rather some nodes within the network had far more connections than others and because of the concept of preferential attachment ('the rich get richer effect') these superior nodes continued to attract more and more connections, so ever increasing the inequality within the network. With a lack of equality of connections, came a lack of equality in traffic. With that came a lack of equality in influence and reach. The web, in short, was not the hierarchy free space of the rhizome, instead it was an arena of power differentials, ripe for the study of overt and covert dynamics of power relations between its inhabitants.

What this thesis will focus on is one particular type of power exchange in the online world: the instances when an institutional academic expert decides to use their expert authority in the online world to seek to take control of the *discourse* around a topic their expertise is connected to. This could be publishing the results of their research with the view to influence debate. It could be defending their view against that of others. It could be challenging and seeking to correct something they believe to be erroneous.

To be able to analyse the dynamics of such an action by experts and the reasons why it often meets with challenge online, the first part of this chapter defines the key terms of the debate: *power*, *authority* and *expertise*. Steven Lukes (2005) holds that power is an 'essentially contested concept… [which is] ineradicably value-dependent' (Lukes, 2005, p. 30) to explain the sheer breadth of competing definitions of it in the disciplines of philosophy, sociology and political theory. He further states that 'both its very definition and any given use of it, once defined, are inextricably tied to a given set of (probably unacknowledged) value-assumptions which predetermine the range of its empirical application' (Lukes, 2005, p. 30). I would argue that the same holds true for the other two terms in the triad that are core to my thesis, namely *authority* and *expertise*.

This chapter will trace many of the different competing views of what *power*, *authority* and *expertise* are, and how they relate to each other. An understanding of each one and their inter-relationships will be built up, with the purpose of constructing a conceptual framework that can be used to support, contextualise and interpret the results of the research. The theorists the analysis will draw most heavily

from are Michel Foucault (1976, 1977) and Pierre Bourdieu (1972), two giants of French sociology.

Foucault's (1976, 1977) work looks at the interplay between power and knowledge, and he saw power in a very different way from the hitherto traditional view of it as the domination of the weaker party by the stronger, as espoused, for example, by Max Weber (1922). There are plenty of critics of Foucault's approach, such as Habermas (1982) and Rorty (1985), but it will be demonstrated that support for his ideas can be found among his continental near-contemporaries such as Bourdieu (1972) and Bauman (1987). Building on Foucault's (1976, 1977) idea of power as both productive and networked and Lukes' (2005) idea of power's dimensionality, I will argue for what I believe to be a crucial fourth dimension, which is the creative, positive effect of power that Lukes left out. This definition of power will then be used to define authority as a subset of power that is seen as legitimate by the actors concerned, and expertise will be defined as a special kind of authority by introducing Bourdieu's (1972) concepts of field and capital. I will set out how experts are seen to hold expertise or expert authority on the basis of possessing a valued skill or knowledge (their *cultural capital*). This *cultural capital* assigns them a specific position in their given field vis-a-vis other actors and justifies any bureaucratic positions they might also hold.

With the conceptual framework completed, there will then be a change in focus for the third part of this chapter. Relevant literature pertaining to online communities of practice will be considered, identifying them as a frequent source of challenge to institutional experts online. The chapter will conclude by considering whether and how the initial conceptual framework so far built up is able to make sense of the dynamics of expert authority and challenge to it online. A number of gaps in the current literature will be identified as part of this analysis, ready to explore with empirical research.

Part I: Defining authority of experts

This thesis is analysing how the authority of experts is challenged online. The term authority is generally defined in sociology with reference to the legitimacy of a

command. One could say that when A follows the command of B because they see it as legitimate either in itself, or because A sees the command as having been arrived at through a legitimate process, then that is an exercise of authority by B over A (Lukes, 2005). This indicates that at least part of the process which makes an act authoritative takes place in the perception of the party being acted on, i.e. that party must give consent and must view the act as legitimate for it to be a case of authority.

This connection between legitimacy and authority goes back to Max Weber (1922), with more than one generation of sociologists and political theorists being influenced by Weber's classic definition of three types of legitimate authority. The first such type is *traditional authority*, which is based on rules and norms passed down through generations within a society, on the basis of which a leader - whether a patriarch (or matriarch) within a household, a tribal leader, or a feudal monarch - is given near absolute power. The word 'near' is there because that power is qualified by tradition, so for example a king has a power of life or death over his subjects, but he will incur immediate resistance if he tries to change a cultural norm, such as religious practice, or the rules governing marriage (as Henry VIII found out). The second type is *charismatic authority*, which is well defined by Bendix (1960) as 'associated with a collective excitement through which masses of people respond to some extraordinary experience and by virtue of which they surrender themselves to a heroic leader' (Bendix, 1960, p. 303). Weber's final type of authority - *legal rational authority* - is prevalent in bureaucracies and includes clear rules which are applied consistently to all, including the rulers, and are known by all in advance. Another feature of *legal-rational authority* is that it attaches itself to the office the person holds rather than to the person itself.

Weber's *charismatic authority* has interesting parallels with the kind of authority that can be said to be possessed by an expert. An expert has authority on the basis of proving their skills and expertise in practice, and would likewise eventually lose their authority if they were no longer successful in that practice. This fits with what Allen (2004) said about *charismatic authority*, explaining the Weberian position:

> The charismatic leader does not gain his authority from any established authority or tradition but solely by proving his powers in practice. He must

> bring well-being to his followers... If this success is eluded for a long time, then the charismatic authority disappears. (Allen, 2004, p. 107)

The word ‘charismatic’ conjures up images of great political or military leaders who lead through inspired oratory or courageous deeds, but the core of Weber’s definition that is applicable to experts of all types is the idea that this type of authority depends on the individual’s superior ability, which needs to be tested and made visible to their followers. Thus, not all types of experts need to have charisma to have charismatic authority, though all need to have a great level of skill and evidence of its successful application. A good example of this would be the authority of a leading QC or an experimental physicist, both would eventually lose authority and their standing if in the former's case, they kept losing court cases, and in the latter's case, their experiments had a run of results that did not support their own theory.

It is worth noting that one of the reasons an expert does not need to have personal charisma - although it helps in some fields – is because sufficient structures have been built up around each profession that experts can rely on supporting them, so they do not have to stand on their own. Such structures and processes are an example of *legal-rational authority*, particularly if we accept the following analysis, again offered by Allen:

> The axial principle of bureaucracy is 'domination through knowledge.' It is popular today to disparage bureaucracy as 'red tape'... This misses the point, however. The modern office is indeed based on the management of files but this is to ensure that those at the top have 'a special knowledge of facts and have available to them a store of documentary material peculiar to themselves.' They know more about the ruled than any previous authorities in history... Bureaucracy has invented the concept of the 'official secret' which means that information can be gathered and exact commands transmitted in a secretive way... 'bureaucratic administration always tends to exclude the public, to hide its knowledge and action from criticism as well as it can.' (Allen, 2004, p. 113)

As such, an expert’s authority could be seen as a hybrid, some of it *charismatic*, dependent on his or her own skill, and some *legal-rational*, dependent on the structures around them and the privileged access they have to knowledge - a good

example of which is the administrative structure of universities supporting individual scientists.

Authority vs Domination

Having tentatively defined expert authority in Weberian terms, the task remains to create a conceptual framework that can help us analyse how authority of experts is challenged online. When I talk of authority being challenged what I am particularly interested in is the reversal of the process of legitimation of commands I described above. Namely, how the legitimacy of the authority's holder is stripped away, wholly or partially, so B stops perceiving the commands of A as legitimate and withdraws consent. When that happens, the commands issued by A do not disappear but their authority does; so instead of using authority, A has to rely on a more direct form of power for their commands to be followed. For much of the 20th century the principal view of power that was not based on legitimised authority was described in terms of domination, of A exercising their will against B, in a way that was against B's best interests.

This connection between authority, power and domination also goes back to Weber:

> [Power] is the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance, regardless of the basis on which this probability exists. (Weber, 1922, v1, p. 53)

Weber's definition of power was then taken up by later generations of sociologists and philosophers. The subsequent evolution of the concept of power is helpfully summarised by Lukes in his classic work '*Power: A Radical View*' (2005). Lukes describes how Pluralists like Dahl (1957), Polsby (1963) and Wolfinger (1960) arrived at a one-dimensional view of power, which involves 'a focus on behaviour in the making of decisions on issues over which there is an observable conflict of (subjective) interests' (Lukes, 2005, p. 19). Their definition: 'A has power over B to the extent that he can get B to do something that B would not otherwise do' (Lukes, 2005, p. 16), was close to Weber's, focussing as it did on direct conflict between

parties, but it was crucially underpinned by observable behaviour in empirical studies.

In Lukes' (2005) narrative view of the evolution of the concept of power, the next step was taken by Bachrach and Baratz (1962) to a two-dimensional view of power by including not only observable conflict, but also indirect ways of domination. An example of the latter would be when the powerful exclude discussion of certain subjects from the agenda or disallow a certain activity which would have benefited a group of people, which was also now seen as an example of power. Lukes commended this as a step forward towards a broader definition of power, but then went further, saying that 'power is a capacity not the exercise of that capacity (it may never be, and never need to be, exercised)' (Lukes, 2005, p. 12). In so doing he defined a third dimension of power, adding the missing concept of its potentiality.[9]

We have, therefore a clear progression from direct power, to power that is both direct and indirect, now including a set of counter-factuals, to, finally, power that is both direct and indirect, as well as being actual and potential. However, it would be wrong to assume that this progression through dimensions of power was uncontroversial. Proponents of the simplest first dimension of power, like Wolfinger (1960), would rightly point out that the further you get away from direct and observable event of power as domination, the harder it is to demonstrate empirically that it is indeed being carried out. How does one test a potential counterfactual? Lukes (2005) acknowledges this deficit but does not dwell on defending against it, claiming instead that his theory's greater potential to explain complex interactions within a society (interactions that the proponents of one dimensional view of power simply do not consider to be power, precisely because it is so difficult to verify them) trumps those concerns.

However, here Lukes' argument can be turned against him, for in exactly the same way as one- and two- dimensionalists did, there are areas that he himself defined to

[9] Lukes' full definition states that '[power] allows for consideration of the many ways in which potential issues are kept out of politics, whether through the operation of social forces and institutional practices or through individuals' decisions. This, moreover, can occur in the absence of actual, observable conflict, which may have been successfully averted – though there remains here an implicit reference to potential conflict. This potential, however, may never in fact be actualised. What one may have here is a *latent conflict*, which consists in a contradiction between the interests of those exercising power and the real interests of those they exclude' (Lukes, 2005, pp. 28-29).

be outside the remit of power. The most important of these was the concept of authority itself, which Lukes, following Dahl (1957) and Bachrach and Baratz (1962), defined to be separate and outside of power (Lukes, 2005). This opens the door to an argument for an even more inclusive, fourth dimension of power. After all, the different and progressively more comprehensive definitions of power still missed out cases where there is *no conflict* to be had, whether direct, indirect or merely implicit, and/or where an action by person A would not actually hurt but rather *advance* the interests of person B. There is clearly missing a definition of power as other than a zero sum game, one that includes authority, rather than just domination.[10] This is exactly the definition developed by Michel Foucault (1976, 1977).

Foucault's definition of power

Foucault (1976, 1977) made a radical departure from a conception of power as domination through conflict. Whereas Weber (1922) - and, implicitly, the many sociologists that took Weber's definition as their starting point - de-prioritized resistance to power and assumed willing compliance on the part of the ruled, Foucault sees a power dynamic, an agonistic but ultimately creative exchange between the ruler and the ruled, the more powerful and the less powerful (crucially, never completely powerless).

In the context of the power wielded by the State, Foucault's insight was that power is not done to people by the State but is a relationship between people and State, where power and resistance to it are both necessary and unavoidable conditions of the relationship.

> The State, for all the omnipotence of its apparatuses, is far from being able to occupy the whole field of actual power relations… [it] can only operate on the basis of other, already existing power relations. The state is superstructural in relation to a whole series of power networks that invest the body, sexuality,

[10] Lukes acknowledged this in the second edition of his book, by drawing the distinction between *Potentia*, the broader concept of power to do something, which covers the positive cases of power application, and *Potestas*, power over someone, which covers power in situations of conflict. However, having drawn the distinction, he still spent most of his efforts on the latter (Lukes, 2005, p. 74).

> the family, kinship, knowledge, technology, and so forth (Foucault, 1977, p. 123)

This means that power is greatly distributed. Manifold loci of power relations, from relations between individuals, to relations within complex local groups, are envisaged, all of which add up to single many-layered network through which power is distributed, what Foucault called ‘fine meshes of the web of power’ (Foucault, 1976, p. 117).

> Power is everywhere not because it embraces everything, but because it comes from everywhere... power is not something that is acquired, seized, or shared, something that one holds on to or allows to slip away. (Foucault, 1976, pp. 93-94)

In this distributed situation, it is possible to conceptualise power not as just one-dimensional domination by the strong against the weak. If power comes from everywhere, then even the weakest can exercise power in certain circumstances. And the model where the state operates ‘on the basis of already existing power relations’ lends itself well to examples where power can be used indirectly, or via a counter-factual, or only in its potential state, because B can be affected by A not via a direct one to one relationship, but via a number of links in the network.

This can be understood through the example of the ways in which the state controls identity. First of all, it uses a number of key documents and tools, like the birth certificate and the passport and has a monopoly of production of these documents thus affecting their availability. However, the government at the apex of the state cannot simply exercise this power over citizens directly, but rather distributes it through local government, civil servants, but also organizations who make the passports to a certain standard, who control the biometric data that now goes into modern passports, and that means those who control access to the databases and the IT systems that hold the biometric data, which in turn means companies who supply the servers on which these systems sit, etc.

There is a whole network of power relations created and the citizen has a *key* part in this too, for they have to choose to use these documents as intended. If one or a few do not, they can be coerced or penalised into doing so, but if most or all do not, then

the power is challenged, and the state may be forced to change the way identity is controlled, as documents such as passports will no longer be usable.

Power being greatly distributed and indirect in this way, so far does not contradict anything argued by Lukes (2005) in describing the third dimension of power. Where Foucault (1976, 1977) moves beyond Lukes is including the creative, and not just the destructive, influences of power. Foucault mentions this explicitly:

> If power were never anything but repressive, if it never did anything but to say no, do you really think one would be brought to obey it? What makes power hold good, what makes it accepted, is simply the fact that it doesn't only weigh on us as a force that says no; it also traverses and produces things, it induces pleasure, forms knowledge, produces discourse. It needs to be considered as a productive network that runs through the whole social body, much more than as a negative instance whose function is repression. (Foucault, 1977, p. 120)

It is precisely because Foucault allows for productive, creative power relationship, rather than simply domination, that the network of power relations becomes even more immense, with an exponential number of indirect connections between actors. To extend Lukes' (2005) terminology, Foucault (1976, 1977) thereby defined a four dimensional power: one that is both direct and counter-factual, actual and potential, and creative and nurturing as well as destructive and repressive.

Foucault's fourth dimension view of power is supported by other thinkers. To take just two examples, James C. Scott (1985) presents a convincing analysis of the way even dominated strata in society resist their domination, by employing strategies and tactics to indirectly counter and subvert the actions of the dominant parties, including the state, in his study of medieval power relations between landowners and serfs in France (Scott, 1985). In this vision of no strata of society ever being completely powerless, he is deploying a Foucauldian rather than a Weberian definition of how power works.

Separately, Zygmunt Bauman (1987) argues that in the modern capitalist society power is increasingly less about repression and more about seduction of the actor, something which is achieved by the market being wholly geared towards satisfying

(and generating) our wants as consumers, through levers such as public relations and advertising:

> Individuals willingly submit to the prestige of advertising, and thus need no 'legitimation' beliefs. Their conduct is made manageable, predictable and hence non-threatening, by a multiplication of needs rather than by a tightening of norms. (Bauman, 1987, pp. 167-168)

Creating a desire for a product, the market therefore acts as a seducer, but the market itself, of course, is the sum total of different actors' powers acting upon each other, whether directly or at a distance. For example, a famous movie star, by promoting a certain perfume, exerts power over the person who buys it for their partner, acting to fulfil the partner's expectations of them. The market here therefore is another name for a network of power relations.

Clearly, seduction, as mechanisms of power, occupies the space somewhere in Foucault's fourth dimension of power. We are no longer in the realm of pure domination where the person over whom power is exerted is necessarily harmed in their interests. Instead seduction could be both a destructive and a creative power. It is for reasons of such subtleties, which nonetheless can have an enormous influence on the balance of power between actors, that Foucault's (1976, 1977) four-dimensional interpretation of power is superior to Lukes' (2005) three dimensional one.[11] Once Lukes starts on the road of including less direct mechanisms of exerting power, then a conclusion of his journey should have been in the broadest possible definition of the power network. Missing out strands like seduction, or others, such as assistance and patronage, renders Lukes' model curiously incomplete.

Foucault's (1976, 1977) networked, four-dimensional view of power carries important advantages for any analysis of the online world, not just for the obvious reason that

[11] Interestingly, despite their different views on the nature of power, Lukes sees great value in Foucault's insights, if not the style of their presentation: 'Foucault beamed floods of light on these questions [i.e. definition of 'power'], in an excessively rhetorical style entirely free of methodological rigour, but in a way that has stimulated much thinking and research in a variety of fields' (Lukes, 2005, p. 61) and if Lukes had pursued the *Potentia* side of power as well as *Potestas*, to borrow his own definition, he would have been closer still. Compare for example, this passage from Lukes to what Foucault has had to say about the distributed nature of power, above: '… social life can only properly be understood as an interplay of power and structure, a web of possibilities for agents, whose nature is both active and structured, to make choices and pursue strategies within given limits, which in consequence expand and contract over time' (Lukes, 2005, pp. 68-69).

its networked nature seemingly mirrors the topography of the internet itself. More important is the fact that a lot of power that is utilised by actors in the online world is arguably not defined by conflict, but rather by the seduction of the market envisaged by Bauman (1987) above. An example would be the power of Facebook as a social network. Facebook's greatest power is not conflict based: it provides such a useful tool for connecting with your friends and relatives that it connects a quarter of the world with over two billion people using it monthly (Constine, 2017). Facebook does not force you to use it and it does not obviously set out to harm its users' interests directly, instead it has seduced its users with its utility. Of course, once Facebook has reached a certain size then its ubiquity – network effects – means that not to have an account or not to use your account excludes you from your friends and 'harms' you socially, which can be argued is the type of potential counter factual domination that Lukes (2005) included as power. Likewise, the power Facebook wields with publishers falls very much into the area of domination. However, the point is that Lukes' three dimensional power only covered some stages and aspects of Facebook's power, whereas Foucault's (1976, 1977) definition covers them more completely. The same argument can be made for Google or Uber. These companies provide very useful 'free' or cheap tools which have been adopted by millions of users. These companies certainly possess the other types of power as well, but their greatest power is arguably the creative power of utility: supposedly enabling us to do new things better.

I will return to consider the power exerted by utility online in Chapter Four. Next, however, I will add the element of 'knowledge', so important to the authority of experts, to the analysis. This leads to rethinking the term *knowledge-power,* first coined by Foucault himself in 'Discipline & Punish' (1975), and broadening it out by marrying it to the concepts of *field* and *capital*, introduced by Pierre Bourdieu (1972).

Part II: Knowledge-Power

In the first part of this chapter I defined expert authority as a combination of Weber's (1922) *charismatic* and *bureaucratic* types of authority. Then I defined authority itself as a sub-type of the fourth dimensional power possessed by all competing actors in

a network that I derived from Foucault (1976, 1977). Authority is that sub-type of fourth dimensional power that is seen as legitimate by those affected.

Another important feature of Foucault's (1976, 1977) understanding of power is that from the start he defines how knowledge works across the power network. One of the principle threads running through Foucault's work is the question of who gets to define what statement or fact is 'true'.

> Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power. Each society has its regime of truth, its 'general politics' of truth – that is, the types of discourse it accepts and makes function as true; the mechanisms and instances that enable one to distinguish true and false statements; the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true. (Foucault, 1977, pp. 131)

Just as with power relations, Foucault sees 'truth' as distributed across a varied network, with multiple rival version of 'truth' co-existing in a dynamic competition with each other. As such, when something is said to be 'known' what is meant in this Foucauldian sense is that at that point in time one version of 'truth' in the network of competing positions, is stronger than the others. This link between knowledge and power is crucial for understanding the type of power wielded by experts. For this reason from here on in I will refer to power wielded by experts to define what is 'known', as *knowledge-power* and use it as a key building block of my conceptual framework.[12]

It is important to note that Foucault (1976, 1977) was against there being a possibility of privileged access to the 'truth' on the basis of which one actor's view and knowledge can be said to be true while another's can be said to be false; which also committed Foucault to challenge the expert / non-expert dichotomy. Specifically, where an expert's position on a given subject is viewed as being true from a

[12] Foucault coined the term knowledge-power to describe something specific: '...practices of surveillance, elicitation, and documentation constrain behaviour precisely by making it more thoroughly knowable or known... It is in this sense primarily that Foucault spoke of 'power/knowledge.' A more extensive and fine-grained knowledge enables a more continuous and pervasive control of what people do, which in turn offers further possibilities for more intrusive inquiry and disclosure.' (Rouse, 2003, p. 99). However, I will go on to apply it more broadly within my conceptual framework to describe the power through knowledge and the control of knowledge production and the *discourse* itself, that is wielded by holders of expert authority.

perspective of epistemic sovereignty, from a Foucauldian perspective, there was a competition of views, with one view being given an advantage because the 'expert' had control over the parameters – scope, terminology etc. – of the *discourse*. This did not mean that he denied that experts existed as a useful category or that they held power and authority on the basis of their expertise. Nor did he deny that it was difficult for non-expert actors to challenge that authority precisely because experts controlled the means and tools of debate. But he held it possible for this challenge to occur.

In fact, Foucault was more interested in the praxis of *knowledge-power* – i.e. the creation of knowledge through the network of power, how it is deployed by experts and how it is challenged by others in the network – than in the contents of knowledge itself (Rouse, 2003). This interest in the practice and Foucault's whole argument against meta narratives that seek to define what is and what is not true, is reminiscent of Nietzsche's preference for life-value vs truth-value (Schacht, 1996). Foucault very much follows Nietzsche, both in approach – genealogy – and in some of his key insights, supporting the Nietzschean scepticism of there ever being a single expert view on something, but rather that there is a competing and complex variety of views on any given topic.

Foucault went so far as to claim that every now and again, there was enough accumulated challenge to the current dominant expert *discourse* within the knowledge-power network for it to be completely overturned. He theorized this as the change from one *Episteme* to another. *Episteme* here meaning a 'system of concepts that defines knowledge for a given intellectual era' (Gutting, 2003, p. 9):

> This *episteme* may be suspected of being something like a world-view, a slice of history common to all branches of knowledge, which imposes on each one the same norms and postulates, a general stage of reason, a certain structure of thought that the men of a particular period cannot escape – a great body of legislation written once and for all by some anonymous hand… Moreover, the *episteme* is not a motionless figure that appeared one day with the mission of effacing all that preceded it: it is constantly moving set of articulations, shifts, and coincidences that are established, only to give rise to others… the *episteme* makes it possible to grasp the set of constraints and limitations

> which, at a given moment, are imposed on discourse… (Foucault, 1969, p. 211)

The concept of an *Episteme* will be returned to in Chapter Six, as a particularly useful methodological tool to bring to bear on the analysis of the impact of digital culture. For the moment, what Foucault's analysis allows us to do is to elaborate the conceptual framework. Experts can be seen as actors in a network of knowledge-power who are differentiated from other rival actors by their ability to control the *discourse* around their subject of expert knowledge, and control what makes a claim valid and what doesn't. They have authority in as much as their control of the *discourse* and assessment of validity claims are accepted by others as legitimate. When that consent is withdrawn they cease acting authoritatively in the eyes of their challengers, and need to instead rely on a more direct form of power – namely, domination - to get their way.

Rebutting the normative criticism

Foucault's view that there are only historically contingent, relative positions of what is true and right argued by the more powerful of the day, was far from universally accepted. As it is crucial to our debate of what expertise is and is not, to be able to define how one assesses both the truth of a statement and the right of someone to be seen as an authority when making that statement, it is useful to look at some of Foucault's critics in this area, to explore Foucault's position with greater rigour.

According to Tully (2009), Habermas criticised Foucault for studying 'underlying practices rather than what actors say and do', 'violating universal validity claims', being 'context-bound rather than context-transcending', and not accounting for 'normative dimensions of his analysis' (Tully, 2009, p. 90). However, these criticisms essentially concern Habermas' frustration at Foucault's refusal to allow an exception to his view that what is judged to be true or valid or right or good or legitimate, are determined by historical context. This wholesale rejection of metanarratives - to borrow Rorty's (1985) phraseology - made it impossible to back up normative judgements over the validity of a given type of behaviour, which Habermas wanted to allow.

Habermas says the following about Foucault:

> [Foucault's later work] replaced the model of repression and emancipation developed by Marx and Freud with a pluralism of power/discourse formations. These formations intersect and succeed one another and can be differentiated according to their style and intensity. They cannot, however, be judged in terms of validity, which was possible in the case of the repression and emancipation of conscious as opposed to unconscious conflict resolutions. (Habermas and Levin, 1982, p. 29)

Foucault responded that Habermas' approach was ‘uncritical of its own form of reflection’ and that his ‘normative analysis [was] utopian’ (Tully, 2009, p. 91).

Interestingly, Rorty (1985) acknowledged that Habermas' reliance on metanarratives could be justifiably attacked by Foucault for its subjectivity, and yet sees Habermas’ approach the more useful of the two for connecting the theory of distributions of power within a society with a programme of action, precisely because of the ability to make normative claims, an ability Foucault voluntarily gave up. Rorty said:

> There is no ‘we’ to be found in Foucault's writings... It is this remoteness which reminds one of the conservative who pours cold water on hopes for reform, who affects to look at the problems of his fellow-citizens with the eye of the future historian. Writing ‘the history of the present’ rather than suggestions about how our children might inhabit a better future, gives up not just on the notion of a common human nature, and on that of the ‘subject’, but on our untheoretical sense of social solidarity. It is as if thinkers like Foucault and Lyotard were so afraid of being caught up in one more metanarrative about the fortunes of the ‘subject’ that they cannot bring themselves to say ‘we’ long enough to identify with the culture of the generation to which they belong. (Rorty, 1985, p. 172)

Rorty prioritises working towards a better society over what Foucault would see as the greater intellectual honesty of pointing out the subjectivity inherent in defining what a ‘better’ society should be. And yet paradoxically, Foucault throughout his life embraced and supported the activism of the French Left. So can it really be, as Rorty claims, that Foucault chose to disconnect his action from his theory?

According to Rouse (2003), it is Foucault's dynamic understanding of both power and knowledge that allows him to avoid being locked in to the sovereignty metanarrative that Habermas and Rorty accept as axiomatic. From this dynamic point of view, there is no need to make a call out to a sovereign power, or an objective meta level judgement of what statements are true or valid, instead 'to make truth-claims is to try to strengthen some epistemic alignments and to challenge, undermine, or evade others. To criticise power is to participate in counteralignments to resist or evade its effects' (Rouse, 2003, p. 115). In essence, Rouse's argument has the effect of evading the attacks of Habermas and Rorty on Foucault by pointing out that they are circular: they assume the rightness of the premise that it is necessary to 'call out to a sovereign power' to assess rival holders of power or rival claimants to truth. Foucault does not. It could be said that the rival positions are two internally-consistent but distinct and non-overlapping domains. In this thesis I choose to privilege and deploy the Foucauldian position over the Habermasian one, precisely because I am not interested in attempting to adjudicate whether the institutional experts or their online rivals are in some way better or more right, rather I am interested in the *dynamic* of their relations.

Knowledge-power and fields of expertise

Weber's (1922) categorisation of the types of authority coupled with a Foucauldian (1976, 1977) 'four dimensional' understanding of knowledge-power, enables building a conceptual framework. What is missing is a more detailed model of how rival holders of authority relate to each other, and what mechanism they use to decide who speaks authoritatively and who does not, particularly where the opponents both see themselves as having some kind of expert authority. For that we can turn to Pierre Bourdieu (1972).

Bourdieu was influenced by Foucault and developed some of the concepts Foucault sketched out in local examples of sexuality or prisons into a more elaborate, but also more universal, conceptual framework. Bourdieu (1972) saw the world of social relations, including power-knowledge relations, as governed by the connected principles of *field*, *capital* and *habitus*. He turned Foucault's (1976, 1977)

undifferentiated network of knowledge-power relations into a series of distinct fields on which actors could exercise power and whereby actors could exist in more than one field simultaneously. For example, a world-famous sociologist like Bourdieu would be active in the field of cultural production, the field of social activism, the field of political influence, and the field of academic research.

Bourdieu did not define the concept of a field too narrowly but, rather, saw it as a structure of knowledge-power that encompassed whatever limits were appropriate to the particular group of actors being described in a particular moment. In *Homo Academicus* (1984), Bourdieu talked about the field of French academics, but also zoomed out to a greater field of cultural production that contained academics but also journalists, writers and artists, which had the smaller sub-field of academics nested within it (Bourdieu, 1984).

Within each field an actor is able to possess different types of capital. These types of capital include the more traditional *economic capital*, but also *social capital* – the sum of social connections that the actor can call upon; *cultural capital* – the sum of knowledge, skills and qualifications the actor may possess; and finally, *symbolic capital*, the type of capital built up when other types of capital are misidentified and so disguised. An example of this used by Bourdieu in *Distinction* (1979), is the concept of artistic taste which, he argues persuasively, is just the misidentified class power built up from *economic, social* and *cultural capital* gained through a life of relative privilege in a bourgeois family in France.

Bourdieu's (1972, 1984) theorisation of fields and capital fill the gap in my conceptual model by explaining how multiple actors in possession of authority and potentially different types of authority, interact. Authority in Bourdieu's model becomes the hierarchical position within a given field gained through the amount of capital each actor has in their possession vis-a-vis other actors. Put simply, actors with more capital in that field can exercise more authority and, hence, power, compared to actors who have less. However, following Foucault, Bourdieu (1972) sees all actors within the field exercising some power; none our powerless. A field therefore is a stage set for constant conflict between the actors involved, as those with less power attempt to either gain capital or to change the field to make it more accommodating to the different type of capital they may possess.

Bourdieu's (1972, 1989) idea of *symbolic capital* is particularly interesting for understanding how expert authority is reproduced. To Bourdieu, experts possess not only *cultural capital* of skills and knowledge but also a high degree of *symbolic capital*, through their control of the *discourse* of knowledge and the reproduction of that *discourse* over generations:

> Professors construct an image of their students, of their performance and of their value, and (re)produce, through practices of co-optation guided by the same categories, the very group of their colleagues and the faculty. (Bourdieu, 1989, p. 14)

> Holders of large amounts of symbolic capital… are in a position to impose the scale of values most favourable to their products - notably because, in our societies, they hold a practical *de facto* monopoly over institutions which, like the school system, officially determine and guarantee rank. (Bourdieu, 1989, p. 21)

Bourdieu envisages a competition between actors to deploy their *symbolic capital* to greatest effect and so gain, 'power over the classification schemes and systems which are the basis of the representations of the groups and therefore of their mobilization and demobilization.' (Lukes, 2005, p. 142)

Two more key concepts introduced by Bourdieu (1972) are *doxa* and *habitus*. *Doxa* described what is taken for granted and internalised in any society or community from the structural aspects of their environment. Whereas *habitus* is a set of internalised dispositions which influence all our actions and thoughts and are 'acquired through lasting exposure to particular social conditions and conditionings, via the internalization of external constraints and possibilities' (Wacquant, 2008, p. 267). There is a clear relationship between the pair, in that the *doxa* of a certain period and context shapes the *habitus* and if the context should change – say, through travel to a different country with its own culture – the *habitus* would also change, but instead of overriding the previous *habitus*, a new layer of *habitus* will build up, with the previous still retained to be triggered by particular signals in the environment (Bourdieu, 1972). These concepts will become important later on in the thesis as the mechanism through which different types of capital underpinning expert authority can be transferred between fields (see Chapter Four).

By marrying the ideas of Foucault (1976, 1977) and Bourdieu (1972) and applying them to describe how expert authority is deployed and how it can be challenged, I can summarise a conceptual framework for my research. I follow Foucault in seeing both authority and domination by experts as different kinds of knowledge-power, distributed across a network and exercised to different degrees by all actors. I follow Bourdieu in seeing this network of knowledge-power as not homogenous, but rather constructed of a number of fields. Each field has multiple actors competing with each other for dominance, with the ultimate objective of control of the *discourse* within that field. Actors are able to increase or decrease their influence within the field by accumulating a range of different capital, including *economic, cultural, social* and *symbolic capital*.

Part III: Online Communities of Practice

Having defined expert authority and power and delineated a conceptual framework that explains how individual actors compete within distinct fields of expertise, the focus of this last part of the chapter is on those challenging the institutional experts online. After addressing some common fallacies in conceptualising the distinction between the 'real' and the online, I go on to identify the challengers as online communities of practice united around a particular aspect of knowledge production. This includes groups of bloggers, networks of activists united by a particular shared concern, patient support communities and, most prominently, Wikipedia, which has become the most well-established exemplar of lay community of practice engaged in knowledge production. After analysing some common aspects of all such communities, I focus on just Wikipedia for the remainder of the chapter. I use Wikipedia as a case study to describe two different ways that institutional experts tend to engage with such online communities of practice, using Bauman's (1987) conceptual distinction of experts as either *legislators* or *interpreters*.

Before discussing challengers to expert authority online, however, it is necessary first to point out some common fallacies and over-simplifications concerning the separation between the online and the 'real' offline world. Many early commentators on the emerging online world enabled by the internet tended to default to a

dichotomy of, on the one side, an undifferentiated group of enlightened and privileged networked pioneers in the online world and, on the other, the more granular, down and dirty physical world of fragmented, local communities. For example, in an early work, Castells (1989) contrasted an 'upper tier... connected to global communication and to a vast network of exchange, open to messages and experiences that embrace the entire world' with the physical reality of 'segmented local networks, often ethnically based, [who] rely on their identity as the most valuable resource to defend their interests, and ultimately their being' (Castells, 1989, p 228).

The view of Castells (1989) about a dichotomy between the online and the offline are challenged by theorists like Bauman (2007), who point out the fallacy of separating the online world from the physical, offline one: neither is any more 'real' than the other. Bauman scoffs that 'only in the ethereal world of theory that the line separating the abstract, 'somewhere in the nowhere' space of global operators from the fleshy, tangible, supremely 'here and now' space-within-reach of 'locals' can easily be drawn' (Bauman, 2007, p. 79). He goes on to argue that:

> Like all other men and women, [the globally connected elite] can't help being a part of the cityscape, and their life pursuits are inscribed willy-nilly in the locality. As global operators, they may roam cyberspace; but as human agents, they are confined day in day out to the physical space in which they operate, to the environment pre-set and continually reprocessed in the course of the struggles of human beings for meaning, identity and recognition. It is around places that human experience tends to be formed and gleaned, that life-sharing is attempted to be managed, that life meanings are conceived, absorbed and negotiated. (Bauman, 2007, pp. 80-81)

It is safe to say that the Bauman (2007) position has won out and has become axiomatic today: the online and offline worlds are seen as co-constitutive rather than separate, with complex interrelationships between and within them. Nonetheless, the idea of a boundary between the offline and the online worlds has still heuristically persisted in literature due to its usefulness for comparative purposes, although this boundary is understood to be conceptual, porous and flexible. That is how I will be utilising it for the remainder of this thesis.

The analysis of a dichotomy between the online or virtual and the offline in the past was often paralleled by the common identification of the internet with Deleuze and Guattari's (1970) 'rhizome', a centreless, organic, undifferentiated and self-perpetuating structure upon which individuals can seamlessly connect, communicate and collaborate. However, this model of the internet has become dated thanks to the realisation that the topography of the internet and of the World Wide Web as a scale-free network,[13] leads to a preferential attachment process (also known as 'rich-get-richer') by which websites which have a lot of links pointing to them, not only have more traffic, but increase their traffic faster than less well connected sites (Barabasi, 1999). The internet therefore is anything but undifferentiated and instead of being centreless has multiple nodes of influence, dominating the rest of the network.

Just as the view of a rhizomatic, undifferentiated network seems naïve, so it is simplistic to think of a single online community. In everyday life people are constrained in how effectively they can choose their communication partners by their physical geography: they need to be in a certain place to do their jobs, carry out their studies, and fulfil their duties to their families, friends and communities. In the physical offline world people thereby have a geographical limit on who they communicate with. In the online world, there appear to be no such geographical limits. The network that provides the topography of the online world greatly facilitates the natural inclination to talk to people with shared interests and goals, since the restrictions preventing this are removed (Wellman, 2001). As Bauman (2007) noted: 'the attraction of a 'community of sameness' is that of an insurance policy against the risks with which daily life in a polyvocal world is fraught' (Bauman, 2007, pp. 87-88). This impulse, enabled by the frictionless and distance collapsing nature of the online world, has produced not a single shared community, but a proliferation of millions of differentiated 'local' communities of the like-minded.[14]

A major theme in the literature on online communities builds on this idea of 'like-minded' individuals congregating together and envisages them as 'communities of practice' (Lave and Wenger, 1991; Wenger, 1998), which coalesce around a

[13] A scale-free network is a mathematical term describing a network whose degree distribution follows a power-law. Of pertinence to this thesis such networks have a propensity to produce a number of dominant, nodes with a high degree of interconnectedness, called hubs. In the case of the internet and the World Wide Web, these hubs are key pages and websites with high number of links pointing to them (Barabasi, 1999)

[14] It is also due to the second order impact of algorithmic bias filtering out things we do not agree with and people with opposing views, creating *echo-chambers* and *filter bubbles*, as will be discussed in the Chapter Four.

particular activity – e.g. writing, code, gaming, support around a shared medical condition, fandom etc. As Smith (2003) makes clear, however, such communities are more than just a team of people working on a shared project:

> A community of practice involves, thus, much more than the technical knowledge or skill associated with undertaking some task. Members are involved in a set of relationships... The fact that they are organizing around some particular area of knowledge and activity gives members a sense of joint enterprise and identity. For a community of practice to function it needs to generate and appropriate a shared repertoire of ideas, commitments and memories. It also needs to develop various resources such as tools, documents, routines, vocabulary and symbols that in some way carry the accumulated knowledge of the community. (Smith, 2003, p. 1)

The enormous attraction of communities of practice for individuals, rather than any other kind of community, is that they harness the strong motivating impulse of collaboration to achieve a common task. Benkler and Nissenbaum (2006) write almost elegiacally about the motivational aspect of such work:

> …socio-technical systems of commons-based peer production offer not only a remarkable medium of production for various kinds of information goods but serve as a context for positive character formation. (Benkler & Nissenbaum, 2006, pp 394-395)

> In the typically decentralised, non-hierarchical settings, even if participants seek to please and impress peers, they need not cower to a boss or any other such authority. As volunteers, they exercise independence of will, initiative, even self-reliance, discretion and free-spiritedness. (Benkler & Nissenbaum, 2006, p 405)

This is an obviously idealised view. Other writers, like Wellman (2001), point out that there are advantages and disadvantages to such sociability with the like-minded:

> Such specialized [online] communities, based on shared interests… may be more diversified than ‘real-life’ community in their gender, ethnicity and socioeconomic status (Wellman, 2001, p. 246)

> [On the other hand] role-to-role community deconstructs a holistic individual identity. A person becomes only the sum of her roles, and there is the danger of alienation. (Wellman, 2001, p. 246)

Perhaps ironically, although the individual members of communities of practice can enjoy the comforting feeling of 'sameness' and communion with each other, Wellman (2001) points out that they can, at the same time, become more separated and isolated from others. Despite all the technological tools whose essence is to bring people together, these communities can become self-contained bubbles, with individuals in the same household living in different online worlds (Wellman, 2001).

Benkler & Nissenbaum's (2006) view can also be critiqued by pointing out that there are still internal hierarchies within these communities of practice, based on length of service, skills and volume of contribution (Castells, 2001). Although, due to the voluntary nature of the work, no one can be forced to do anything directly, peer pressure can still be exerted in these communities; and the collective as a whole can still exercise censure (O'Neil, 2009). I will discuss such internal hierarchies in more detail in subsequent chapters.

However, one respect in which Benkler & Nissenbaum's (2006) view of these communities of practice holds true is to do with their self-conscious rejection of external expert authority. Not only do these communities of practice choose as their activity a type of peer-to-peer knowledge production that is independent from academic experts external to the community itself, they develop their own communal 'tribal' identity in contrast to and in opposition to that of external or offline expert authority (O'Neil, 2009).

Eysenbach (2007), in studying online community sites dedicated to patient experiences around a particular illness, coined the term *apomediation* to describe the reliance on recommendations of peers rather than experts, particularly where mediated through technologies like collaborative filter tools, social networks and folksonomies.

> Apomediaries… mediate without standing 'in between' consumer and services or information. Rather, they 'stand by' and provide added value from the outside, steering consumers to relevant and high-quality information without

being a necessary requirement to obtain the information or service. (Eysenbach, 2007, p. 162)

Since communities of practice develop their own repertoire of rules and procedures (Wenger, 1998) and their own shared language (Eckert, 2000), there is considerable variation between them. These can include individual bloggers and commentators forming a kind of community with a loose network of other bloggers united by shared politics or interests and an outer ring of their respective readers and followers. They can also include small communities united around a shared concern, like a patient group or local history group. They can also include large community platforms, such as Wikipedia. However, most of the smaller communities are not comprehensively engaged with or surveyed by researchers in a way that would lend itself to my analysis. By far the most studied in sociological literature and engaged with by experts is the online encyclopaedia, Wikipedia, which is cited in hundreds of academic papers.[15] For the remainder of this part of the chapter I will, therefore, focus on Wikipedia as a case study of expert engagement with a community of practice that claims its own expertise in an area of knowledge production.

The question of how institutional experts engage with online communities of practice, like Wikipedia, has been addressed in literature in two ways that could be understood in Baumanian (1987) terms. In the first scenario, the external expert assumes the role of *legislator* and takes an epistemically sovereign position of judging the local expertise of the online community they engage with from the outside, more often than not finding it wanting. Even if they do not find it wanting, they would certainly never question their own right to assess the expertise of the online community against the parameters of the institutional expert's own field. In the second scenario, the external expert assumes the role of the *interpreter*, and would at least recognise that the expertise of this local community may be different in kind and context and therefore should be judged against a different set of parameters (Bauman, 1987).

The majority of existing studies examining online expertise fall squarely in the *legislator* mode. For example, in a meta-review of papers concerning themselves with the quality of content on Wikipedia (Mesgari et al, 2015), the analysis of dozens

[15] See, for example, Giles, 2005; Hartelius, 2010; Yasseri et al, 2012; Graham, 2015; Wilson and Likens, 2015.

of papers tended to assess its content accuracy, currency, comprehensiveness by comparing against an external academic standard. In particular, the deliberative process of Wikipedia's editor community in agreeing a settled view of any page in the online encyclopaedia, is compared unfavourably to the traditional peer review process in academic publishing (Wilson and Likens, 2015). Interestingly, even when the assessments were positive, such as evidence suggesting that the quality of content on Wikipedia is comparable to the Encyclopaedia Britannica (Giles, 2005), the method was still a legislative one; that is, judging Wikipedia against the parameters of the offline field of academic expert knowledge production.

Alternatively, perspectives which adopt the expert as *interpreter* approach are in the minority and can be said to engage with online communities of expertise as separate fields of knowledge-power, with their own rules of *discourse*. There is an associated realisation that the institutional and, more broadly, other academic experts may not have the methodological tools to assess what is happening accurately and therefore an attempt to create new methodologies that are native to the online experience. Researchers who adopt this perspective (cf. Hartelius, 2010; Yasseri et al, 2012; Graham, 2015) argue for recognising that Wikipedia has an expert authority of a different kind, that operates against the framework of its own rules and norms and so should be assessed against them instead.

The difference between the *legislator* and the *interpreter* approach can be best explained through an example. Wilson and Likens (2015) contend that the fact that anyone can edit Wikipedia pages at any time means the 'content in Wikipedia can be extremely dynamic; two students could obtain, within seconds, diametrically different information on a controversial scientific topic...' (Wilson and Likens, 2015, p. 5). On this basis they reject Wikipedia as an authoritative source.

Wilson and Likens rightly recognise that at any given time the content of the published page is unreliable. That is true, as anyone can make an edit at any time. However, they fail to balance this drawback with potential benefits, such as the advantage of 'currency' that the ability to correct an error and make it live immediately gives Wikipedia over a published academic journal, where a correction may take months. These authors fail to note Wikipedia's own policy that it should not be used as a citable source by students or academics, precisely because of potential

volatility.[16] Wilson and Likens also fail to explore how and why a settled view of a piece of content on Wikipedia is arrived at. They do not, for example, spend any time exploring the talk-pages, the very part of Wikipedia where rival editors argue the case for a particular version of the content. Finally, the authors reveal a lack of what Bourdieu (1972) would call *reflexivity* as researchers, in not asking themselves tough questions as to what biases they themselves bring into an analysis of what is in effect a rival method of knowledge production, to the one they are engaged in as academics.

Compare Wilson and Likens short-comings, with Hartelius' (2010) approach that takes account of Wikipedia's rules and policies. Hartelius argues that the dialogical nature of Wikipedia's community talk pages where rival editors argue out a case for one or the other interpretation:

> …are *Wikipedia's* way of explicating its expert methodology. In short, they comprise a *techne*. They are the equivalent to how an academic journal article or conference presentation begins with the author's first assumptions and methods. Just as those first few pages and minutes of presentation demonstrate the scholar's expertise, so too do *Wikipedia's* community pages. (Hartelius, 2010, p. 512)

Not only is this a more positive reading of the dynamic editing process which never stops around each Wikipedia page than that of Wilson and Likens, but Hartelius raises this process up as a very definition – a re-definition, maybe – of what expertise is: '[on Wikipedia] expertise is rhetorical. Experts *argue* for the legitimacy of their expertise. To be an expert is to use persuasive strategies in order to gain sanctioned rights in a specific area of knowledge...' (Hartelius, 2010, p. 506). Hartelius (2010) is not the only one to notice the potential of Wikipedia's *techne*. Black (2008), to take another example, describes the advantages of Wikipedia saving the full edit history of a page as an enabler of collaboration. He considers the possibility that it may be a platform for a more open and transparent kind of peer-review of academic work, since the peer-review discussions themselves will take place in the open and be preserved for posterity in a page's edit history.

[16] See https://en.Wikipedia.org/wiki/Wikipedia:Wikipedia_is_not_an_acceptable_citation

Not every author who falls into the *interpreter* category is quite as positive about the expert authority of Wikipedia as Hartelius or Black. Brendan Luyt (2012) is more critical. Luyt analysed the existing citations on the history of Philippines pages and critiqued the credentials of the authors cited. He then conducted a review of academic literature on the topic, finding dozens of expert monographs that could have been cited by the Wikipedia editors but had not been. His conclusion is illuminating:

> This lack of awareness [of existing citable sources] is, I argue, not due to the general ignorance of the editors; it stems more from a vision of texts as undifferentiated bearers of facts, making them essentially interchangeable. This view is enhanced by the preponderance of summaries and overviews which conceal debates and turn what are rough seas into calm water. Such a situation does not give the editors much incentive to explore deeply the knowledge-producing community surrounding the subject of Philippine history. For the most part they remain content to settle on those sources easiest to find and read, confident that the texts they use are equivalent to each other and any other they happen upon. (Luyt, 2012, p. 1876)

Unlike other studies considered, such as Wilson and Likens (2015), Luyt is not simply taking a methodology made for another context (for example, peer reviewed journals in academe), and applying it without modification or recognition of the special characteristics and additional benefits of an online encyclopaedia. He specifically follows Wikipedia's own internal citations policy and in his conclusion, makes clear that the issue is not that some sources of questionable quality or impartiality are used, but that other sources are actually omitted. He expected that 'the community of experts authorized by Wikipedia editors would be equal to or greater than the community commonly granted expert status in the world outside Wikipedia' (Luyt, 2012, p. 1877), harnessing the benefits of casting the net wider and enabling a broader range of voices into a debate - but that is not what he has found. Rather, the range of sources is determined by more mundane restrictions of what is most accessible and easiest to use, and the personal familiarity or biases of a particular dominant Wikipedia editor active on those pages (Luyt, 2012). His approach shows Luyt to be acting as an *interpreter*, even though a critical one.

What Hartelius (2010), Black (2008) and Luyt (2012) are all doing is holding up the practice of expertise on Wikipedia, the *techne*, as Hartelius calls it, as an alternative and rival *discourse* about what expertise actually is, regardless of whether they then go on to criticise or praise it. This can be recast in terms of my conceptual framework, as a realisation that the practice of expertise on the online Wikipedia platform happens in a separate Bourdieuan field. From here on I will refer to this field as the online field of expert knowledge production and will contrast it with the distinct offline field of expert knowledge production.

As discussed at the start of this part of the chapter with reference to the offline / online world dichotomy, it can be argued that the two fields are not truly separate from each other. It is equally possible to theorise all the activities of knowledge production in various virtual communities of practice and in academia to be part of a single field of knowledge-power. However, I follow in the tradition of Foucault (1976, 1977) and Bourdieu (1972) in saying that such conceptual distinctions only matter as far as they are useful in illuminating aspects of the way the world is. What is interesting to me is how the authority of institutional experts is challenged when they engage with such online communities, therefore it is more productive to conceptualise the structure as two distinct fields as that puts into focus the process of crossing from one field into another.

Indeed, conceptualising Wikipedia as an alternative field of expert knowledge production helps to identify a clear gap in current literature that I intend to target with my empirical research: that there is a lack of analysis of the dynamics that play out when institutional experts engage with online communities of practice and attempt to use their expert authority. In the *interpreter* style of literature there are a number of attempts to describe the structures and practices that are peculiar to Wikipedia and that form its *techne* (O'Neil, 2009; Yasseri et al, 2012; Graham, 2015). However, these authors are not focussing specifically on expert authority and how it translates or does not translate from the offline to Wikipedia and the wider online field of expert knowledge production.

The argument that I will start to build up in the course of the next four chapters of analysis, is that the institutional experts should be conceptualised as 'outsiders' entering an alien field of knowledge-power when they engage in the online field of

expert knowledge production on platforms such as Wikipedia. They are not known or yet established in the online field and so the only authority they can rely on is their institutional expert authority. The institutional experts have to quickly orient themselves in the alien field, without full knowledge of its rules and without the *habitus* that is built up by the existing actors within that field. I will argue that it is this lack of local knowledge and local *habitus* that triggers challenge by existing actors in the field. Just because the institutional experts are seen as authorities in their own field of practice does not guarantee that the same level of consent and legitimation will be accorded them in the online field. Instead, as will be contended in the analysis chapters, they will be perceived as trying to dominate inappropriately. This often triggers push back by local online 'experts' who see themselves as occupying a higher and more dominant position in the hierarchy of their field compared to the institutional expert trying to engage with them.

Conclusion

In this chapter the first outlines of a conceptual framework were defined. I followed Weber (1922) in defining the type of authority that an expert possesses as a combination of *charismatic* and *legal rational authority*. It is effective when a command or an act by the holder of that authority is not only followed, but also accepted by the target of that act as being justified. When that justification is withheld, the attempted command or act by the holder of expert authority is instead perceived as a type of domination and this can trigger challenge.

To be able to better analyse this process of challenge, I have constructed a new conceptual framework. I follow Foucault (1976, 1977) in seeing both authority and domination by experts as different kinds of knowledge-power, distributed across a network and used to different degrees by all actors. By borrowing from Bourdieu (1972), I see this network of knowledge-power as not homogenous, but rather constructed of a number of fields. Each field has multiple actors competing with each other for dominance, with the ultimate objective being the control of the *discourse* within that field. Actors are able to increase or decrease their influence within the field by accumulating a range of different capital, including *economic, cultural, social*

and *symbolic capital*. Smaller fields can be sub-sets of larger fields, in the way the field of expert knowledge production is a sub-set of the larger field of cultural production, that also includes writers, journalists and artists.

In applying this conceptual framework to existing literature, I focus on how expert authority is challenged online by holders of a rival authority in online communities of practice. I am able to demonstrate that there are two contrasting approaches in literature to analysing such communities: the *legislator* and the *interpreter* approach (Bauman, 1987). These can be understood through my conceptual framework as either accepting a community like the Wikipedia editors as occupying a separate field of expert practice and assessing it in terms of its own *doxa*, or seeing it as operating within the field of institutional academic expertise and judging it against the parameters of that field. I side with the former approach as it is more fruitful in understanding the mechanics of the challenge experts encounter online.

In Chapter Three, my analysis will begin by examining Wikipedia in relation to the results of qualitative interviews conducted with English Heritage and the Royal Society.

Chapter 3

Wikipedia - a case study of local authority

> Dear Wikipedia, I am Philip Roth. I had reason recently to read for the first time the Wikipedia entry discussing my novel ‘The Human Stain.’ The entry contains a serious misstatement that I would like to ask to have removed. This item entered Wikipedia not from the world of truthfulness but from the babble of literary gossip—there is no truth in it at all.
>
> Yet when, through an official interlocutor, I recently petitioned Wikipedia to delete this misstatement, along with two others, my interlocutor was told by the ‘English Wikipedia Administrator’—in a letter dated August 25th and addressed to my interlocutor—that I, Roth, was not a credible source: ‘I understand your point that the author is the greatest authority on their own work,’ writes the Wikipedia Administrator—’but we require secondary sources.’
>
> (Roth, 2012)

Introduction

Wikipedia provides a case study of a fully-fledged alternative community with a claim to expert authority, specifically the community of Wikipedia editors. Moreover, because of the popularity of Wikipedia and its dominance of search results of factual topics, institutional experts have no choice but to engage with it, prompted often by a need to correct information they see as erroneous, or simply a desire to build a public profile for themselves or for their subject matter.

As the Roth quote at the start of this chapter shows, the experiences of experts with Wikipedia can be beset with challenges which strike at the heart of what it means to

have expert authority. Philip Roth, a celebrated American novelist and so, by any traditional measure, an expert in his field of literature, felt compelled to edit Wikipedia to correct some facts as he saw them. Having tried to have the page edited he was shocked to have his request for changes denied and clearly saw this as a challenge to his expert authority. His incredulity at not being seen as a 'credible source' for insight into a novel he himself has written is palpable. However, Roth demonstrates a profound misunderstanding of the rules and norms of Wikipedia and is trying to engage with it on offline field terms that do not apply to this online community in this way. As I set out in my conceptual framework, this is a case of Roth, as a offline field expert, trying to engage with Wikipedia without realising that he is operating in a different field of knowledge-power to the one he is used to. His accrued capital of literary accomplishments and the prerogative of authorship do not work in this other field as he expects them to.

English Heritage and the Royal Society, two expert institutions that are the focus of this study, have experienced similar challenges to Roth around their activity on Wikipedia. However, unlike Roth, they have been able to adopt a strategy that enables them to succeed. They do this by taking time to acquire new forms of capital suitable to the new field they are engaged in, to develop *habitus* and thereby build local authority with the Wikipedia editor community. In this chapter I will use the experience of English Heritage and the Royal Society to map out the dynamics of the first encounter between a holder of institutional expert authority and the Wikipedia editor community, which is a gap in the current literature on the wider topic of Wikipedia knowledge production. At the same time, I will aim to further develop my argument.

In the first part of this chapter I will explore the nature of expert authority present in the Wikipedia editor community and how it challenges the authority of institutional experts. In so doing, I will show clear support for the minority reading of Wikipedia's expert authority within the literature: that it is indeed different in kind and deserving to be assessed on its own terms, as a distinct field of expert practice. I will show that the expert authority of institutions like English Heritage and the Royal Society is challenged both when Wikipedia is cited inappropriately, and when their representatives try to edit its pages themselves. Key to the latter type of challenge will be understanding how the conversations happening on talk-pages – the

community discussion forum attached to each Wikipedia page that allow editors to justify and debate the edits they make[17] – are a crucial way of engaging with the editor community.

In the second part of the chapter I will explore the features of the *doxa* of the Wikipedia expert field that make it unique. These include, firstly, the significant free time and motivation required to win 'edit-wars' on Wikipedia pages. I advance a new type of capital identified as *time capital* to explain this feature at work. Secondly, they also include a specific culture online, such as the importance of autonomy, suspicion of external authority, and a tendency to competition, aggressive challenge and hyper-sensitivity online. These combine to define a specific determining factor of the success of expert authority online, that I call *democratic levelling*. I argue that this original concept is key to understanding why the Wikipedia editor community prioritises policies such as *neutrality* over the academic expertise and qualifications of contributors.

In the third and final part of this chapter, I discuss the strategies institutional experts adopt for dealing with and overcoming challenge from the local authority of the Wikipedia editor community. Grounding the discussion both in my own empirical work and observations from relevant literature, I demonstrate that institutional experts can engage with Wikipedia fruitfully and successfully if they respect its norms and culture and take time to win local authority in the community of editors. I also identify weaknesses in the Wikipedia authority model that relies on the quality of citations to external sources, quality which is often questionable, and argue that this area is precisely where institutional experts need to engage the most. I use this analysis to go back to my conceptual model and reshape it to take account of the complexities of the relations between the offline expert field and the Wikipedia field of editor expertise. By doing so I propose a second new type of capital, called *projected capital*, operating between a offline field of expert knowledge production and its connected online field.

[17] See https://wikipedia.org/wiki/Help:Talk_pages for more information on Talk-pages.

Part I: Challenges for experts engaging with Wikipedia

Wikipedia has emerged during the interviews as a platform that plays an important role for the institutions being considered in this study, English Heritage and the Royal Society. In this first part of the chapter I will discuss the dynamics of institutional experts engaging with Wikipedia (for example, to cite, edit or add an article), and its community of editors and the challenges that can ensue as the institutional academic authority of external experts clashes with the culture of Wikipedia's editor community and their own practices of authority.

As a starting point, it is useful to remember that underpinning the conceptual framework used in this thesis is Foucault's (1976, 1977) insight that all actors within a network of knowledge-power relations are able to deploy some measure of knowledge-power. Since I theorise the Wikipedia editor community as engaging in knowledge production within their own Wikipedia field, they too have a kind of expert authority. After all, they judge each other's actions to be justified or not within the *doxa* of Wikipedia, and power accepted by others as justified is the very definition of authority (Weber, 1922). I will refer to this authority as Wikipedia editor community's 'local authority' as shorthand, when juxtaposing it with the institutional authority of academic experts.

This relationship between an expert institution and Wikipedia is best illustrated with an example from one of the interviews with English Heritage interviewee EH6. During a listing case[18] when English Heritage was submitting evidence to the government on the importance of a particular historic property – Hereford House by the architect Colin St John Wilson - it was noticed that one of English Heritage's official inspectors sourced a piece of evidence to prove the importance of the building from Wikipedia. This caused a scandal in the heritage industry, with rival experts arguing that the use of Wikipedia undermined the authority of English Heritage's position, regardless of whether the facts on Wikipedia are right or wrong (EH6). A commissioner at the Commission for Architecture and the Built Environment (CABE) said: 'If you are an expert, you don't go to Wikipedia,' and

[18] A 'listing case' refers to legal challenges or other type of proceedings connected to a building on the National Heritage List for England. See www.historicengland.org.uk/listing/the-list/

added further, ‘Wikipedia can be wonderful, but it isn’t an impartial source.’ (Henley, 2009). In its defence, an English Heritage spokeswoman said:

> While we by no means use sources such as Wikipedia for any kind of qualitative assessment as part of our advice writing or recommendation, it might occasionally be useful for checking dates of architects, like Colin St John Wilson, who are so recent and not yet in the key published sources. We didn’t see any reason to remove or hide it, and sent it over as a complete record of how we dealt with the case. (Henley, 2009)

During our interview EH6 said:

> Even if the Wikipedia reference was correct, English Heritage using it would be odd: begging the question why do they have all these researchers! I suppose it is that thing: that if you were an expert you don’t [use Wikipedia], you are an expert by dint of the fact that your research is done at a deeper level, you have accessed information from places where somebody, a normal member of the public, would not be able to. (EH6)

This case raises some key issues that will be discussed in this chapter. Wikipedia clearly *is* being used by experts. Someone in English Heritage used it to do their research about Hereford House and included the page as part of the official submission to government. The response by English Heritage to the furore quoted in the BDOnline[19] article by Henley (2009) also suggests that this use of Wikipedia as part of the research project is not unusual. On the other hand, there is clearly a sense of unease about the relationship between institutional experts and Wikipedia. The use of Wikipedia is seen to undermine expert authority, and raise questions about expert judgement. This is obvious not just from the reaction of rival experts like CABE, but from the fact that this case is brought up in an interview about expert authority unprompted two years after it happened. EH6 clearly thinks it is an example of an underlying issue with experts’ use of online resources.

This evident tension with the use of Wikipedia by experts can be read as a contrast between use of Wikipedia for background research and use of Wikipedia as a source. Explicitly, the view that Wikipedia should just have been part of the internal

[19] The website version of the Building Design magazine aimed at specialist audience of architects, see www.bdonline.co.uk

preparation of the case, but not relied upon in final submission to government, i.e. not be publicly cited. Eijkman's (2010) research with academic experts in different disciplines, from natural sciences to social sciences and humanities, found clear evidence for this dichotomy. The majority of academics he surveyed admitted using Wikipedia in some way, but mostly as a pre-research tool. By contrast, there was a negative attitude amongst the majority to Wikipedia being cited in final papers resulting from the research. This reading is also supported by the Royal Society interview with their in-house Wikipedian, interviewee RS3, who underlined Wikipedia's official guidance to users that it is not to be cited in research, but should instead be used for pre-research purposes as a way into more authoritative source material (RS3).

There is another possible reading of the original English Heritage case study: that the tension there goes further than just a Wikipedia document having been inappropriately cited. That it has to do with a negative view of Wikipedia's use per se, whether for pre-research or for citation, by at least a sub-section of the expert community. The tone of the EH6 interviewee strongly suggests this, as does the tone of the responses from rival experts quoted in BDOnline. For example, Professor Stonehouse from University of Manchester said: 'It's ridiculous for any organization to use that source as we all know it isn't properly validated' (Henley, 2009).

It is interesting to note that Stonehouse in BDOnline was quoted as saying that he had 'already found at least one error on the page in question [Wikipedia page about the architect Colin St John Wilson]' (Henley, 2009). But the much-cited study comparing Wikipedia and *Encyclopaedia Britannica* published in *Nature* (Giles, 2005) found that, on average in the sample of science entries tested, Wikipedia had four errors per page and *Encyclopaedia Britannica* had three errors per page.[20] Thus, the one error found by Professor Stonehouse is neither here nor there as evidence for unreliability of Wikipedia vs. other more traditional publications. Moreover, the meta-review of all literature on Wikipedia carried out by Mesgari et al (2015) found the literature split with 10 studies rating Wikipedia as broadly reliable and six studies rating it unreliable.

[20] Giles also found that although Wikipedia contained more factual errors than Encyclopaedia Britannica in the 42 science articles tested, it was not much more (162 compared to 123 errors) and of what Giles considered a serious error, the two encyclopaedias had an equal number: 4 each (Giles, 2005).

The issue seems to be not the reliability of Wikipedia but rather the *perception* of reliability among experts, and more broadly a certain antagonism of some experts towards Wikipedia as a source of information, irrespective of the evidence for its reliability. Johanna Hartelius (2010) adds an important insight when she describes the relationship between academic experts and Wikipedia by using words like 'challenging' and 'defiance' (Hartelius, 2010, pp. 506-507). This can be explained in terms of the knowledge-power relationship I have outlined in the conceptual framework: consciously or not, Wikipedia may be being seen by the academic experts of institutions such as CABE and English Heritage as a rival source of knowledge-power, with an ability to influence debate, to define which building deserves to be listed. As has been set out in the literature review chapter, there is a growing appreciation among some researchers studying Wikipedia that it holds such potential challenge to their role as experts, but this is still a minority view. If my conceptual framework is a valid framing of the issue, then encounters between institutional experts and the Wikipedia editor community should evidence at least some signs of competition for control of the *discourse*, with each side applying the different types of capital in its possession (*cultural, social, symbolic*) to achieve dominance. In my empirical research I analyse the way English Heritage and the Royal Society staff engage with the Wikipedia editor community to see if this is the case.

At the time of the interviews English Heritage and Royal Society both had an active programme of editing and adding content to Wikipedia either about their organisations or about topics they are invested in. The English Heritage interviewee EH2 explained that their objective in engaging with Wikipedia was correcting broken links, errors and adding missing information about some historic properties English Heritage looked after and about the listing and planning process in which English Heritage had a statutory role (EH2). One of the main original drivers was that Wikipedia was 'a main referrer [of traffic] to the EH website' (EH2). In the Royal Society's case, there is a similar pattern of the organisation feeling the need to add missing information to Wikipedia because of its dominance as a source of information for audiences important to the Royal Society. The interviewee RS3 was an 'in-house Wikipedian' engaged by Royal Society specifically to improve pages on

Wikipedia relevant to it as an expert scientific body, because of the perceived 'issue of under-representation of the Royal Society's reports on Wikipedia' (RS3).

What can be drawn from both interviews is that these expert institutions see engagement with Wikipedia as a priority because of Wikipedia's influence as a source of information for the public; and they see it as their responsibility to make sure relevant information on Wikipedia is reliable and comprehensive. However, the interviews also reveal that the process of making changes to Wikipedia for representatives of these expert organisations is not straight-forward and is often met with challenge.

In the case of English Heritage, the interviewee EH2 described the process of establishing trust with the Wikipedia editors' community when they[21] took on the role of trying to edit some inaccurate pages about English Heritage. The first action undertaken was to make a talk-page to establish their identity (EH2). Moreover, EH2 made a conscious decision to start posting there under their real name rather than using an alias:

> When you start doing things on Wikipedia as a new editor there are lots of antennae that prick up and once you start doing lots of changes people start to notice and initially there were lots of questions as to why [I] was changing all these links… using an alias would have been a really bad idea. It implies you have something to hide and the Wikipedia 'police' would trace your IP address and find out where you are coming from. (EH2)

The interviewee's next step was to do some edits of information which they thought was inaccurate or was missing links to relevant websites controlled by English Heritage (e.g. a Wikipedia page about a historic property not having a link to that property's website). When editing the page about English Heritage, EH2 warned the Wikipedia community in advance about the intended changes. EH2 was updating out-of-date, incomplete information, and wanted to make sure there was similar info about English Heritage as about the National Trust.[22] EH2 then published all the changes on a talk-page to ask for feedback. As there was no feedback they 'made

[21] To avoid inadvertently identifying the interviewees, 'they' have been used throughout, rather than the gender specific 'he' or 'she'.
[22] The National Trust is a charity looking after historic properties in England, and is seen as both a partner and a competitor for some aspects of English Heritage's work (EH2).

the mistake of just publishing everything and it all got taken down again. The Wikipedia editors could not cope with a large scale edit of that size to something that already existed. The immediate thing was suspicion' (EH2).

This example demonstrates clearly the agonistic nature of the encounter between an outsider trying to make an edit to a page and the insider editors of Wikipedia, who, by policing the pages under their control and reverting changes made by others, make a claim to a local authority over the contents of the page. What is also clear is the lack of any kind of privilege given to holders of institutional expert status by the Wikipedia editor community. The interviewee was an employee of English Heritage trying to edit pages about English Heritage properties. As such, they might traditionally have been perceived as having expert authority and therefore having justification for improving existing information. However, the fact that EH2's changes were rolled back by other editors even after EH2 made their identity clear demonstrates that their expert status (or, perhaps more accurately, their status as the official representative of an expert organisation) did not count in the way it might in more traditional media like TV or newspapers. After all, English Heritage staff would often be invited on TV or Radio to talk about English Heritage properties precisely *because* they were perceived as experts (EH6). The same did not apply in connection to Wikipedia editors. It would seem that expert authority does not *automatically* translate into local authority within the Wikipedia online community.

This tension between the authority of the institutional expert and the local authority of the Wikipedia editors who reverted EH2's edits can be explained in Bourdieuan (1972) terms as a contest for position in a field. The two actors were engaged in a competition where each made use of a type of *cultural capital*. EH2, by identifying themselves, made use of the *cultural capital* afforded as an official representative of English Heritage, an august organisation known for its expert authority in the subject matter of architecture and architectural history. The nameless Wikipedia editor who reverted their edit made use of their own *cultural capital*, namely the knowledge of Wikipedia's processes and policies, what Hartelius (2010) called the *techne* of Wikipedia (see discussion in Chapter 2).

What is not yet clear, conceptually, is which field of knowledge-power relations is the encounter happening in? Is it the field of architectural history dominated offline by

architectural historians at CABE and English Heritage, or is it the field of Wikipedia' version of architectural history dominated by the Wikipedian community of architectural history editors? Or, finally, does the engagement take place in both fields simultaneously? A clue to this can be found by tracing the full exchange between EH2 and Wikipedia editor(s) after the initial encounter described above.

After the initial edits were reverted, EH2 realised that they needed to proceed more slowly to build trust with the community of Wikipedia editors. EH2 therefore adopted a different strategy: they suggested a way forward to the editors via talk pages, namely that EH2 would edit a bit at a time and give reasons for changing each thing. EH2 then worked with the editors and did a section at a time, building up from minor edits like spelling mistakes and broken links to editing bigger bits of content, but leaving the 'controversies' section unchanged. The gradual approach of engagement worked and all the changes EH2 proposed were eventually accepted. The only thing that was changed by the Wikipedia editors was EH2's referencing method (EH2).

This demonstrates that part of the prerequisite to getting changes made for EH2 was to engage in an on-going dialogue with the Wikipedia editor community. Crucially, just introducing themselves on a talk-page, as EH2 did initially, was not enough. The key to successful engagement was dialogue over specific edits, which Hartelius (2010) identified as a core part of the *techne* of Wikipedia. By accepting the rules of the 'tribe', EH2 is accepted to a degree. This whole process echoes O'Neil's (2009) description of local authority in online communities of practice: authority is gained slowly through track record, becoming familiar to the community, engaging in dialogue (hence the interviewee's use of 'talk' pages), obeying local rules (by editing small things first, not using an alias, and avoiding controversial subjects), and therefore achieving authority through the merit gained via what O'Neil calls 'conspicuous contribution' to the community's shared project (O'Neil, 2009, p. 38).

EH2 having to adapt their approach to the rules of the Wikipedia community to be successful, is an indicator of which field the encounter between them and Wikipedia editors took place in. If the encounter happened in the offline field of architectural history expertise dominated by English Heritage, then a different *techne* (cf. Hartelius 2010), would likely have been deployed. This could have been any of a number of activities English Heritage takes part in all the time and has grown to master, such as

a meeting/conference between Wikipedia editors and English Heritage experts, or an exchange of formal letters of the type English Heritage submits to planning enquiries to back its case. As it is, the resolution came through a discussion with editors on Wikipedia's own talk-pages, following the methods prescribed by that community to which EH2 had to adapt. This strongly suggests the encounter was in the online field of expert knowledge production, bounded by the Wikipedia platform and community, rather than the offline field.

The behavioural dynamics seen in the EH2 case are similar to those described by Jemielniak (2016). In Jemielniak's first-person account of trying to make an edit to Wikipedia, changes were similarly rolled back by an existing editor, despite engagement via talk-pages. The difference is that Jemielniak, while being an academic and as such a holder of some offline expert authority, could not claim to dominance within the real-world expert field in the way English Heritage, as the pre-eminent body in the heritage sector, could. Furthermore, Jemielniak was an established Wikipedia editor at the time, with therefore both a knowledge of the *techne* of Wikipedia and some established capital within the Wikipedia expert field. For example, Jemielniak mentions trying to use Wikipedia's rules to argue the case, an example of using *cultural capital*. Jemielniak also used a personal connection with a Wikipedia SysAdmin[23] to try to get them to adjudicate, which is an example of having and deploying *social capital* within the Wikipedia expert field.

The differences between the two cases are important. In effect, Jemielniak (2016) was using capital build up within the Wikipedia's expert field and therefore deploying local authority, whereas, EH2, though having greater offline expert authority than Jemielniak, had no local authority in Wikipedia at all, at first, and took time to gradually build it before their changes were accepted. This difference in status was reflected in how successful EH2 and Jemielniak were at achieving their goal. Although both had their changes initially rolled back, this is not unusual on Wikipedia (Hartelius, 2010). The difference in status really emerges in what happened next: after the first roll-back Jemielniak was able to get her edit straight back up and the subsequent discussion on talk-pages was not that her edit would not stand, but rather whether it would sit alongside the edit of the rival editor or override it

[23] On Wikipedia a SysAdmin – short for system administrator – is an editor given extra powers to police the site and the editor community (O'Neil, 2009).

(Jemielniak, 2016). The engagement between the two parties was therefore as *equal peers*. EH2, on the other hand, could not get her edit back up for a long time. Instead EH2 was forced to build up local authority slowly by first making much more minor contributions and working up to being trusted enough to have the original edit made. This difference in experience supports my analysis that it is the local authority built up over time through accumulation of local capital within the Wikipedia field that is key, not how much offline expert authority you have at the point of the initial engagement.

It is worth noting that the majority of academics trying to engage with Wikipedia do not seem to take the approach adopted by EH2 or Jemielniak. According to a survey conducted by Eijkman, 'Only 26.4 per cent [from different disciplines surveyed] have delved deeper into Wikipedia's 'history' pages to check on changes to content pages' (Eijkman, 2010, p. 179). This lack of awareness among academic community of the inner workings of Wikipedia explains why many academic experts will continue finding their authority painfully challenged when they try to edit Wikipedia: they don't know the rules of engagement and seemingly make no effort to learn them.

At this stage of analysis, I have brought my conceptual framework to bear to interrogate the conflict between offline academic experts and the local experts within the Wikipedia editor community during initial contact, in so doing validating the model on empirical data. Nonetheless, the empirical findings have so far not significantly moved beyond existing literature, or at least those authors who have engaged with the authority of online expert communities such as Wikipedia as *interpreters*, respecting the local *techne*, such as Hartelius (2010), Jemielniak (2016) and O'Neil (2009). In the next part of this chapter I will go on to analyse what underpins the inherently different characteristics of Wikipedia's local expert authority. I will use my empirical data to move the argument beyond the existing literature.

Part II: Wikipedia community culture and norms

In this part of the chapter I will examine the special characteristics of the Wikipedia editor community that have a bearing on how local authority works within Wikipedia and how, therefore, external experts are engaged with. These features include the

part motivation, stamina and availability of free-time play in winning 'edit-wars' between rival editors; a sense of an internal hierarchy within Wikipedia and its hyper-localism; and finally, a sense of what could best be described as the cultural norms of the Wikipedia community, particularly the effect of what I term *democratic levelling* as a determinant of the boundaries of authority online. I will demonstrate that these features help form the *habitus* of the actors within the field of Wikipedia editorship and so, to a certain extent, determine their behaviour.

The most striking aspect emerging from the interviews is the extent to which the culture and language/norms of Wikipedia determine the extent to which external expert authority is accepted. One definite part of the culture of Wikipedia is confrontation and creative disagreement evident in the prevalence of 'edit-wars', successive edits and reverts that happen on an on-going basis. Yasseri et al (2012) have noticed that such 'edit-wars' are usually focussed on a very small sub-set of pages and are usually carried out by a small group, sometimes just a pair of opposing dominant editors. Yasseri et al also note that 'debates rarely conclude on the basis of merit: typically they are ended by outside intervention, sheer exhaustion, or the evident numerical dominance of one group' (Yasseri et al, 2012, p. 11).

This confrontational, agonistic nature of the exchange is knowledge-power in action. The starting point may be a disagreement over a particular fact or interpretation in the content of the page, but as Yasseri et al's research makes clear, this quickly devolves from attempted acts of authority – where *cultural capital* might be used to win consent for a particular interpretation of the fact – to acts of domination stripped of any notion of consent. Additional forms of capital are then deployed, including *social capital* within the community – the 'numerical dominance' of their group of allies.

There is also one other type of capital deployed during 'edit-wars' that would be new to Bourdieu, but that clearly fits within the schema he designed: *time capital*. By this I mean possession of the free and flexible time required to be able to track changes and deal with edits on contested Wikipedia pages. This task is complicated by the fact that edits to a given page are not spread out uniformly over time. Instead, Yasseri et al (2012) have demonstrated that Wikipedia page editing activity is subject to what they call 'burstiness': a high number of edits are clustered in short periods of

heightened activity, the ‘war’ phase, with periods of no edits, the ‘peace’ phase, in between.[24]

When Yasseri et al (2012) mention exhaustion as one reason ‘edit-wars’ pause, this is a reference to how time consuming such struggles over rival versions of pages can be. This is also explicitly noted by Graham (2015):

> In this process, less experienced users will often encounter contributors who devote many hours to editing pages… As biographer Stacey Schiff has observed, ‘It can still seem as though the user who spends the most time on the site – or who yells the loudest – wins.’ On discussion pages and internet forums, there are numerous anecdotal examples of would-be biographers, many of them knowledgeable experts, who have attempted to create a page but have given up in the face of strident opposition. (Graham, 2015, p. 228)

This is a significant issue for offline academic experts trying to engage with Wikipedia in order to make an edit or add content. By virtue of their position as experts within academe or institutions like English Heritage and the Royal Society, they are likely to have more external responsibilities. Therefore, they will probably have less time to conduct an ‘edit-war’ than a typical editor of Wikipedia, who, research shows, is likely to be a young male in their 20s and 30s, university educated and with sufficient spare time (Hartelius, 2010). Thus, it can be said that the offline academic experts engaging in the Wikipedian expert field lack the *time capital* necessary to compete effectively.

These insights allow us to contextualise one aspect coming out of EH2’s interview: the sheer effort and duration of engagement that EH2 had to go through, making edits, seeing them rolled back, talking to existing editors on talk-pages, explaining what they were doing. The edits took EH2 six months, which, had there been no opposition, likely could have been done in a matter of weeks (EH2). The scale of the engagement required makes sense if you are dealing with disparate editors controlling their own pages, to each of whom you have to introduce yourself (almost) from scratch. EH2 wanted to do work on Wikipedia for a while and it is only when

[24] The only exception are an even smaller subset of high controversy pages – e.g. biography of President G.W. Bush – which undergo what Yasseri et al call ‘never-ending war’ where larger numbers of editors are involved on opposing sides and the edit-wars can last a long time, though Wikipedia SysAdmins increasingly lock down such controversial pages, capping the number of edits and reverts (Yasseri et al, 2012, p. 11).

they successfully petitioned English Heritage management for part of their time to be ring-fenced to this as a mini-project that EH2 was able to gain traction (EH2). RS3 interviewee, meanwhile, explained that the attraction of an in-house Wikipedian is partly to allow time to focus on editing Wikipedia that permanent staff do not have (RS3).

An interesting question to ask would be why, in such agonistic encounters, are institutional experts unable to use the one type of capital that they would seem to have more of than their local opponents, namely *cultural capital*? That is the type of capital they have by virtue of being representatives of expert institutions and by virtue of their own academic learning and expertise. I argued during the analysis of interviewee EH2's first encounter with Wikipedia editors that their offline expert *cultural capital* was over-ridden by the local *cultural capital* of the editors that related to the *techne* of understanding and using the way Wikipedia works. Now it is possible to see that the Wikipedia editors' arsenal also possesses a *social capital* of being supported as part of the community of other editors and a *time capital* of being able to respond quickly. Together, these extra types of capital possessed by a Wikipedia editor help out-weigh the *cultural capital* of the offline institutional expert. There is one final element at play here and it is that the experts' offline *cultural capital* does not become effective in the online field straight away. This is something I will set out in more detail towards the end of this chapter.

Editor Hierarchy

The evidence of the interviews I have conducted at English Heritage and the Royal Society suggests that the agonistic nature of exchanges on Wikipedia that underpins 'edit wars', does not ensue out of any kind of anarchical absence of hierarchy in online communities of practice. Instead, it emerges out of a rival hierarchical system, with its own rules and practices. Interviewee EH2 did several hundred edits on Wikipedia over an intensive period of six months and gradually became better known in the Wikipedia community. EH2 would not, however, say that they were more trusted, rather they would use the phrase 'becoming more familiar,' referring to both EH2 becoming more familiar with Wikipedia and the existing editors with them. 'A

change or edit with [EH2's] name against it became to be received as 'oh, another one of those...' But that does not mean that the community would be any less critical about what EH2 was proposing. EH2 did not get any special editing privileges, 'for that you need to have done thousands and thousands of edits, a much higher threshold, doing edits all day every day' (EH2).

The last quote shows something interesting: not only is authority gained locally and built over time within an online community, but there is a *hierarchy* of authority. There is a basic level of authority that pertains to an editor, but some exalted individuals gain 'extra privileges'. The basic level of authority is gained through contribution and participation; additionally, there is a further level of authority that only a few exceptional individuals have. In Wikipedia's case that kind of authority pertains to the SysAdmins, who, according to Graham (2015), have rights to check the identity of contributors (via tracing their IP address, as the interviewee EH2 mentioned), block certain pages, or sections of pages, from being changed and block contributors altogether. This kind of added authority is vested in the individual by the rest of their community in a democratic process of nomination and acclamation. This is done in recognition of some quality they have which is valued by the community. It could be just the high quality or quantity of their content contributions, but more often it is for specialist community-facing functions like identifying 'sock-puppets', users who edit pages under false identities (e.g. PR companies making positive edits to their clients' pages) (Graham, 2015).

Tellingly, the EH2 interviewee referred to these people as 'Wikipedia police' (EH2) thus consciously or unconsciously reaching for a metaphor from the 'real' offline world that recalls that only limited organs of the state reserve the ultimate authority: the monopoly over the legitimate use of force. These individuals take upon themselves the responsibility to decide what is and what is not acceptable, acting to enforce their reading of Wikipedia policies. Their power to do so seems partly due to special privileges like the ability to revert content and ban other users. This is, arguably, Wikipedia's local version of Weberian *legal-rational authority* vested with a particular rank within the 'tribal bureaucracy' of Wikipedia, to use a term coined by O'Neil (2009).

However, there is more at play here than just special privileges. The engagement the EH2 interviewee had to undertake was not just with a single SysAdmin, as may be the case within a strict bureaucracy, but rather with a plethora of different members of the community, 'watching' different pages she was trying to edit. Many of them were not SysAdmins, but none the less were in a position to revert EH2's changes. In Wikipedia, any editor can revert a change and roll-back to a previous version, however SysAdmins have extra powers to block a particular edit from being rolled back by anyone, or limit the number of roll backs that can be done within a certain time span, to reduce the volatility of controversial pages (Graham, 2015).

An insight into how this editor network functions comes from a conversation with Royal Society's in-house Wikipedian RS3[25]. This interviewee has authored thousands of pages and has a number of them watch-listed, meaning that they get notified when the pages are changed, so can check and change back if required. In addition, RS3 has extra editing and admin privileges and they have sat for a number of years on the Wikimedia UK council (RS3). As such, this interviewee RS3 can be justifiably seen as part of the Wikipedia elite that interviewee EH2 referred to.

However, the RS3 interviewee made clear that their authority lies primarily on the pages that they have track record over (a lot of history of art pages, amongst others), and does not necessarily give him rights to edit other parts of Wikipedia without their own changes being rolled back. RS3 makes clear that even for someone in their senior position, it is still important to 'get support of immediate editors in the subject area' (RS3).

The fact that RS3 has a lot of authority over certain pages but almost no added authority beyond anyone else over most other pages, highlights that Wikipedia is not a uniform landscape, rather it is granular and hyper-local in the way authority is applied. It is not so much an online tribe, in O'Neil's (2009) terminology, but a confederation of tribes, each of which coalesces around specific types of content which could be as granular as a single highly controversial – and therefore highly watch-listed and fought over – page (Yasseri, et al, 2012).

[25] The Royal Society has used a number of such in-house Wikipedians over the years. In essence, they are an existing experienced Wikipedia editor who is paid a salary to do work on behalf of the Royal Society for a portion of their time.

There are very good cultural and societal reasons for why hierarchy is far from absent online, which can be analysed by reference to the theoretical work of Bourdieu (1972). Loic Wacquant (2008) explains that:

> Contrary to a common (mis)reading of [Bourdieu's] work, his is not a utilitarian theory of social action in which individuals consciously strategize to accumulate wealth, status or power. In line with Blaise Pascal, Bourdieu holds that the ultimate spring of conduct is the thirst for dignity, which society alone can quench. For only by being granted a name, a place, a function within a group or institution can the individual hope to escape the contingency, finitude and ultimate absurdity of existence. Human beings become such by submitting to the 'judgement of others, this major principle of uncertainty and insecurity but also, and without contradiction, of certainty, assurance, consecration.' Social existence thus means difference, and difference implies hierarchy. (Wacquant, 2008, p. 265, penultimate sentence quoting Bourdieu, *Pascalian Meditations*, p. 237)

Thus, when we engage in argument, we are bound to seek support and affirmation of others, but more than that, we need the argument to take place in public, in order for the resulting agreement to have a meaningful impact on our place in the hierarchy. This relationship between the actor, their opponent, and an audience with the authority to pass judgement is key to understanding Bourdieu's (1972) concept of *fields*. Since, in my conceptualisation, the power-relations in an online community of practice are a Bourdieuan field, it will follow the same dynamics: there will be a hierarchisation of positions based on the accumulated capital of each actor. These types of capital will, crucially, be different to the capital in the offline academic authority field, including *social capital*, *cultural capital* and *symbolic capital*.

Conflict and agreement are therefore not antimonies. Conflict has no purpose without the possibility of agreement at the end of it. While agreement, without passing through the conflict of argumentation has no value. That is why, even though we look to join communities of like-minded people where possible, it does not mean these communities have no internal conflict dynamics and no hierarchy. Each one

acts as a *field*, while being sub-parts of a larger online *field*.[26] Armed with this understanding of how the dynamics of collaboration and conflict inevitably produce hierarchy in the online field, it is possible to make sense of the nature of online communities that is hidden by the effects of *democratic levelling*.

Rules, policies and *Democratic Levelling*

It is clear from both literature (cf. O'Neil, 2009; Graham, 2015; Jemielniak, 2016) and my empirical findings that not only does hierarchy exist on Wikipedia, but there is also a strict codex of rules followed by its editors. During their interviews, EH2 and RS3 have both spoken about the importance of the Wikipedia policies such *as No Original Research*, *Neutrality*, *Notability*[27] for the editor community and the no less important etiquette and behaviour norms, including the primacy given to collaboration, and the importance of citation. Graham (2015) describes this well:

> In addition to hierarchical structure, a particular kind of contributor culture has developed on Wikipedia, which compounds the increasingly exclusive nature of authorship on the site. This culture has its own norms and jargon, and to be a contributor one must not only learn the policies and act accordingly, but also develop a particular kind of literacy in order to read and participate in behind-the-scenes debates. (Graham, 2015, p. 230)

Note the focus here is on 'behind-the-scenes debates.' This means primarily the talk-pages which form the principal battleground for the 'edit-wars'. Wikipedia, as the EH2 interviewee said with great insight, is effectively two different web platforms: the visible content pages which is the encyclopaedia and a social media platform for exchanging views, opinions and justification for edits, which are the talk-pages

[26] This also explains the continuing splintering of online communities into new ones. What course of action is best followed if your position in the field is as the one dominated rather than dominant, meaning your attempts at argumentation stand less than even chance of resulting in agreement on your own terms? Online, with no restrictions of geography, the answer is often to splinter and form your own field.

[27] *No Original Research* policy states that Wikipedia pages are secondary reference sources that link to external primary sources and it is not a place to publish new knowledge that has garnered no independent citations; *Neutrality* policy states that Wikipedia prioritises the independence and objectivity of sources over other considerations like the authority of contributor; in particular, pages engaging in self-promotion are not allowed; *Notability* policy governs which individual can get a biography page on Wikipedia.

(EH2). As discussed in part one of this chapter, the majority of the researchers into Wikipedia do not sufficiently factor this duality in to their analysis.

Of the full codex of Wikipedia rules and policies, the *neutrality* policy and the linked *no original research* policy are, arguably, at the heart of how Wikipedia editors perceive the whole endeavour of expert knowledge production and where they most differ from offline institutional experts' norms. O'Neil (2009) points out that if there is one 'transgression' of community code that is guaranteed to raise the ire of Wikipedia editors more than any other, it is failure to uphold the *neutrality* policy. While Tkacz points out that 'Wikipedia is defined through the systemic exclusion of certain forms of knowledge – and it does not discriminate between these discriminations!' (Tkacz, 2015, p. 65). This means that policies such as *neutrality* and *no original research* are fundamental to Wikipedia editors' perception of who they are as experts.

The importance of *neutrality* also came through strongly in interviews. Interviewee RS3 mentioned that they had to be 'open, transparent to fellow Wikipedians' of their role as a paid in-house Wikipedian in the Royal Society and that they were 'doing less because of conflict of interest' focussing on factual changes not promotion (RS3). What was also interesting was the hesitancy in the answers of this individual when speaking about this paid role, despite being confident and ebullient in all other answers. RS3 was sensitive to the scepticism any for-profit or self-serving activities attract among the community of Wikipedia editors and worried that in their in-house role they would be perceived by fellow editors as not sufficiently neutral.

Both the EH2 and the RS3 interviewees mentioned that there is a difference between trying to edit pages about topics of interest *to* English Heritage or the Royal Society versus trying to edit pages *about* English Heritage and the Royal Society themselves, i.e. pages devoted to the history and 'bio' of the organisations, which were seen as a more sensitive type of edit due to the *neutrality* policy. Furthermore, where there are controversies recorded on those organisational 'bio' pages, those could not be edited at all (without guarantee of being rolled back, even once those editing had gained sufficient local authority for other edits to be accepted). The RS3 interviewee explicitly stated that 'reputation management [on Wikipedia] was controversial… factual changes ok, but not promotion' (RS3).

This can be taken to extremes that might be perceived by an observer to be absurd: EH2 mentioned having to reference factual changes about English Heritage properties from any source *apart from* English Heritage publications about its own properties. EH2 sometimes had to resort to the step of citing newspaper articles that were themselves citing those very same English Heritage publications, because no other academic publications existed (EH2).

In this way, the *neutrality* policy presents a clear challenge to offline expert institutions such as English Heritage and the Royal Society. One of the most commonly cited reasons for experts wanting to edit pages on Wikipedia is to either correct what they see as inaccuracies or fill gaps (Graham, 2015). Inevitably, experts focus on pages they feel they have greatest expertise in, which are likely to be covering their own research. In trying to make changes to such pages, they will inevitably come up against the *neutrality* policy and the *no original research* policy. The EH2 example above shows the kind of seeming absurdities that can ensue when they are forced to cite anyone but themselves on topics they feel they own. Attempting to follow the Wikipedia policy and citing other sources, works against those expert institutions' normal *modus operandi,* of trying to dominate their particular domain of knowledge and produce an authoritative view.

This is especially an issue for English Heritage because of the additional statutory role it has, which the Royal Society does not. In the offline field planning and listing cases English Heritage cannot afford *not* to dominate the argument, lest any slight weakness is used against it in court or during government's review of listing cases (EH5). This makes editing Wikipedia pages about an aspect of listing and being forced to refer to third party sources that may not be quite right (but more right than the original Wikipedia page being edited), a difficult step for English Heritage to take.

A related conundrum for institutional experts is how to avoid coming across as being over-mighty in online debates. Interviews with EH4 and EH5 provided evidence of English Heritage being aware of how their external 'outsider' expertise can be negatively received by online communities. EH4 said that people 'like an underdog' so showing too much authority/power could be counter-productive for an expert led organisation (EH4). EH5, said that there is a danger of the organisation being accused of 'expert arrogance' if it was not open to challenge and not open to listen to

other points of view in online debate. EH5 also added that there is a tension between being open to challenge and battling for your opinion, which, for an organisation like English Heritage with a remit to protect heritage and a legal obligation to do so, is a necessary activity (EH5).

The idea that having too much authority is a problem may seem contradictory, but it is in line with a general cultural norm prevalent across many online communities that I call '*democratic levelling*'.[28] I define it as a predisposition towards individualism, entitlement to have opinions heard and general distrust of authority and loss of deference that has been evident in broader society over the last few decades, but is magnified online. The concept of *democratic levelling* conforms with the strand of literature that sees the online culture as first and foremost anti-authoritarian (Lovink, 2005), and, at least in its communities of practice, autonomous of traditional structures and holders of authority (O'Neil, 2009). Indeed, online communities are seen by some theorists as precursors to a new type of networked resistance to the authority of the globalist trans-national and capitalist 'Empire' of corporations and bureaucracies such as the World Bank (Hardt & Negri, 2000). Some of the implications of these ideas I will go on to challenge and un-pick in Chapter Six of this thesis, but they do point to a cultural aspect of online communities of practice that is, at the very least, real to the members of those communities.

In interviews with both English Heritage and the Royal Society, the effects of *democratic levelling* were evidenced by a number of individuals. Interviewee EH3 said that there is today 'an expectation of having a voice regardless of status… [and] people expect their voice to be heard'. This is part of the culture of democracy online which generates a pressure for greater transparency and 'right of reply' (EH3). Another English Heritage interviewee, EH4, said that there are a lot of voices given airtime online, some of which are extreme, but the key thing about all of them is their independence, which leads to them often challenging authority (EH4).

[28] In defining my term '*democratic levelling*' I am following the idea of 'levelling' found in Nietzsche: '[A] level playing field... [is] to the disadvantage of those who are skilled at climbing hills and leaping potholes. An easy grading system works against the interests of the best students, who have no opportunity to show their superiority… It is the process that Nietzsche... calls 'levelling'. Who benefits from this procedure? Obviously those who are worst off… but also, and perhaps equally, the mediocre' (Solomon, 1996, pp. 202-205).

Hartelius (2010) finds that there is a spirit of challenge to offline expert authority that exists in online communities in general and in Wikipedia specifically. He describes it as the desire to 'stick it to the experts' (Hartelius, 2010, p. 518). Therefore, for institutional experts trying to engage online, their expert authority and position can sometimes be more of a hindrance than a help. I will now demonstrate that this is the root cause of why offline capital of experts does not translate easily on Wikipedia.

As discussed earlier, the confrontation with Wikipedia editors in all the case studies considered is happening in the Wikipedia expert field rather than the offline field; however, this change of field may not be noticed or understood by the institutional expert. Indeed, Eijkman (2010) found that a high proportion of researchers never engage with Wikipedia's history pages, which could be understood as showing that they do not find it necessary to engage with Wikipedia *techne* because they do not appreciate they are in Wikipedia's field. If that is the case, they would try to employ the type of capital that works for them in their own field, such as *cultural capital* of their academic credentials, without any adjustment. The capital, designed for the offline expert field, will not work as effectively online. This gap in efficacy would mean that instead of being authoritative through winning the consent of their interlocutors, the offline institutional expert would instead be perceived as a 'newbie' illegitimately trying to interfere in the community's shared project.

Resistance against an 'outsider' or someone new to the community who may not have yet understood the rules and norms, or picked up the correct terminology, has been highlighted as a trend in online communities of practice by O'Neil (2009). O'Neil discusses the process of 'flaming' which means aggressively and publicly criticizing something that an outsider or a 'newbie' to the online community has done as a cardinal case of reaffirming the primacy of local authority over any other external kind:

> In a self-regulatory context, flaming can operate as a form of discipline, such as when newbies are flamed for asking questions which have previously been answered. Moreover, flaming, and the recognition that it is occurring, which may lead to objections by third parties who witness the flame, serve to codify, reaffirm or contest norms. Authorizing oneself to address the violation of a norm constitutes the basic building block of communicational online authority

> – the invocation of a tribal rule to correct others' poor grasp of communal standards. (O'Neil, 2009, pp. 78-79)

Although my empirical data affirmed the existence of attacks or flaming of newbies, it also demonstrates how the practice could be turned against the perpetrator by using the community's own policies and code of behaviour as a greater authority within the community than any individual editor, however experienced. In their interview, EH2 described how, in reaction to disappointment about all their initial work being reverted when EH2 first started editing, they posted a complaint to the other editors on the talk pages, saying that the other editors were not following the spirit of *Not Attacking Newbies* policy.[29] That direct approach led to an apology from existing editors and then helped EH2 start a conversation on the talk-pages which eventually led to her changes being accepted, as described earlier (see also a similar case described in Jemielniak, 2016). The successful defence by EH2 against their critics in the Wikipedia editor community can be understood as EH2 using their newly gained *cultural capital* within the online field to try and overcome an act of domination by the other editors. EH2 did this by referring to the greater *legal-rational authority* of the community's own rules and policies.

To conclude this section, the Wikipedia editor community has developed a complex culture permeated with an instinct towards *democratic levelling* directed externally of the community, but also with opposing instincts of liking order and showing respect towards over-arching policies internally within the community. Indeed, these policies are often called upon by opposing sides in an 'edit-war' as evidence to buttress their opinion (cf. Luyt, 2012; Graham, 2015; Jemielniak, 2016). So EH2's experience is entirely representative of the norm: they were initially challenged by existing editors with all of EH2's edits reverted. Then, when EH2 was able to quote the relevant 'magic formula' of the Wikipedia policy, EH2 not only had their edits accepted, but also received an apology from the editor community. In effect, EH2 successfully demonstrated their credentials as a member, or at least a candidate to be a member, of the community by speaking the language, knowing the rules and following the etiquette. EH2 was now seen to be one of the tribe.

[29] *Not Attacking Newbies* policy is designed to prevent established editors from criticising newcomers too harshly if they inadvertently fail to follow Wikipedia policy or etiquette

Part III: Projected Capital

If the *neutrality* policy of Wikipedia makes it difficult for expert organisations like English Heritage and the Royal Society to edit content directly linked to them, a question arises if there are other kinds of content with which experts can have a more fruitful engagement. In this final part of the chapter I will show that there is such content and that it is in connection with another of Wikipedia's policies, the *verifiability policy* on providing valid citations for all facts in its entries, where offline institutional experts can have the greatest positive impact. Along the way, the analysis will further develop my argument and introduce a new concept of *projected capital*.

Wikipedia was never intended as a final destination for authoritative information, but rather as a gateway to high quality primary sources that lend authority to its own summary content. The interviewee RS3 makes this clear. When questioned, RS3 explained that 'Wikipedia has the idea of a 'reliable source' and a self-recognition as not one of these' (RS3). This means that it is the reliability of sources used that is important and what users of Wikipedia should rely on, not the pages themselves. In a sense, the final authority of the information used is the responsibility of the users, in taking the time to follow up the citation links and read the primary sources, and, if necessary, then continue to read wider. As we have already seen, the most important rules and policies of Wikipedia support this by stipulating that its articles should be *from a neutral point of view*, be *verifiable*, and, as previously mentioned, *not be original research*.

This vision of Wikipedia as a gateway to reliable further sources, only works if the quality of those sources is rigorously controlled and this is one area where Wikipedia shows a significant weakness. According to EH2:

> Lecturers keep telling their students that Wikipedia should not be used as a reliable source because not all references on a page are of equal value, some lead to academic works, some lead to magazine reports which themselves have no references. It all depends on the level of profile of that particular article. I suspect some links [references] are never checked, but I have seen instances that they [reference links] are taken down on pages like

> Stonehenge or Solstice, because they are not a valid article.... References are selectively checked, especially when there is someone who is passionate about a particular topic. (EH2)

This recalls the issue with the quality of citations on Wikipedia identified by Luyt (2012) that was discussed in detail in Chapter Two. Luyt noted that his original expectation that Wikipedia would provide a wider range of sources than a book or a journal article thanks to 'wisdom of crowds', was wrong. In reality, many articles he reviewed in connection with the history of the Philippines were poorly referenced on Wikipedia. Luyt also noticed a pattern that sources were more likely to be cited if they were easy to access: often those that had been digitised and/or from popular history and summary reference books, rather than peer reviewed academic sources. This means that there is a weakness with the *techne* of Wikipedia as seen from both the vantage point of an offline academic expert used to peer reviewed literature, but, more applicably in Wikipedia's separate expert field, from the vantage point of Wikipedia's own rules. An internal rather than an external challenge to Wikipedia's authority is possible.

My empirical results presented so far show that Wikipedia's editors are aware of the close link between quality of sources and authority and it is in this domain that offline academic expert knowledge is engaged with more positively, as can be seen from the Royal Society interview. RS3 mentioned an interesting feature about a sub-set of Wikipedia pages devoted to medical matters: 'policies for medical info are more tightly enforced on Wikipedia with a higher standard of sourcing… medical entries on Wikipedia are more policed' (RS3) and 'most Wikipedians writing medical stuff are doctors (untypical for other wiki parts)' (RS3). He was at pains to underline the accuracy of medical pages on Wikipedia, even when he was happy to admit that for other subjects accuracy is not the driving goal – the driving goal is impartiality of sources. For example, he mentioned that 'Wikipedia scored high for quality of material in a survey by American Society of Toxicologists: above FDA and NY Times' (RS3).

When probed further, the target of his efforts to define Wikipedia as medically accurate became clear: he was drawing a contrast with other online communities run by patients and typically dedicated to a particular illness. The example he mentioned

by name was the Patient Help website: ‘Wikipedia is not like that [Patient Help website] as it is written by doctors: absolutely ball breaking technical terminology’ (RS3).

This demonstrates an interesting case of expert authority online: the contrast being drawn not just between offline experts and the local authority within a given online community of practice, but between rival online communities. The role of the offline expert (the doctor) in this case is used by one community to differentiate itself in terms of authority from another: doctors write Wikipedia medical entries, whereas the other online communities are mainly run by patients. It is worth looking more closely at what is happening here. Why are some offline experts, such as the English Heritage interviewee, not given any authority within the community until they build local authority from scratch, while at the same time the fact that expert doctors contribute to medical pages is seen as a very positive differentiator of Wikipedia from other online communities?

I would argue that this apparent contradiction reflects the complex nature of the Wikipedia editor community’s relationship with offline experts. O’Neil (2009) noted about Wikipedia that, ‘central to Wikipedia is the radical redefinition of expertise, which is no longer embodied in a person but in a process: the aggregation of many points of view.’ (O’Neil, 2009, p. 149). Hartelius also concludes that on Wikipedia expertise is dialogical in nature: ‘…by facilitating an on-going chain of interdependent and multivocal ‘utterances’, the site [Wikipedia] challenges traditional ‘monologic’ expertise’ (Hartelius, 2010, p. 506), i.e. it is a new kind of expertise, one made up of multiple voices engaged in an ongoing debate, rather than a single settled view.

In this environment, external experts such as doctors *are* welcomed, but only as *a* voice in a dialogue with others, not *the* voice, the final opinion that stops further debate because of their offline expert authority. Also, in order to be welcomed to participate, doctors need to implicitly agree to submit to the vision of Wikipedia as a mass-produced pre-research tool, where the citations, their accuracy and impartiality, are more important than the authority of the author of the page. Wikipedia is not the authoritative last word, it is the accurate introduction and reliable gateway to further reading. The author of any page, however great their expert authority, still has to take time to gain local authority by following Wikipedia’s editing

rules. As long as they accept the non-negotiable axiom of *neutrality* when engaging with the Wikipedia community, the experts' offline authority is used to enhance the authority of Wikipedia entries. However, if they do not accept this axiom, the experts' offline authority would instead be seen as a threat and their contributions would be rejected. That is why EH2 took time to build local authority and also why, even after gaining trust, they still did not try to change the 'controversies' section of the pages about English Heritage itself. Eventually, EH2 might have been recognised by the other Wikipedia editors as a valuable contributor in a position to know facts about English Heritage properties, but because impartiality was more important than authority, being seen to remove negative comments about English Heritage would have broken that axiomatic rule. That is also why RS3 talked positively about their collaboration with experts in the Royal Society: 'working side by side with experts means we [the editors] can do more, be more confident' (RS3).

To conclude this section, it is clear that, in light of the dialogical, inclusive nature of local authority practised on Wikipedia, there is a possible role for an offline expert authority to exert its influence in the Wikipedia expert field, but crucially only after it is locally established, or, one could say, after it has had time to become *acclimatised* to the axiomatic rules of the community.

Connecting offline and local authority

O'Neil (2009) gives the best example of the interplay between local and offline expert authority on Wikipedia. In a case referred as the *Essjay case*, after the name of the Wikipedia editor concerned, said editor rose high within the Wikipedia community by accruing various editing privileges, 'he was a mediator, a sysops (or admin) with *oversight* and *CheckUser* privileges, a bureaucrat, and a member of the ArbCom[30]' (O'Neil, 2009, p. 155). Essjay was then exposed as not having the various external expert qualifications he claimed on his Wikipedia editor profile page. He pretended to have degrees in religious studies and doctorates in law and philosophy and, crucially, 'repeatedly used these bogus credentials to bolster his views during

[30] ArbCom (arbitration committee) is the senior governing body of Wikipedia that provides arbitration between rival editors. See https://en.Wikipedia.org/wiki/Arbitration_Committee_of_the_English_Wikipedia

content conflicts with others [in Wikipedia editor community]' (O'Neil, 2009, p. 155). When it was discovered that he was a 24-year-old with no academic qualifications whatsoever, he 'was eventually asked to leave Wikipedia and Wikia by Wales'[31] (O'Neil, 2009, p. 155).

Essjay accrued local authority in the Wikipedia expert field through contribution to the community's joint labour as an editor through the process I described earlier in the chapter: he gained and deployed different types of capital. His *cultural capital* rested on the number and quality of contributions he had made and then on the various special titles he collected, such as ArbCom membership. His *social capital* rested on his influence within the network of other Wikipedia editors who voted to give him those titles. O'Neil describes Essjay as very active both in contributions he has made and the debates he engaged in on talk pages, indicative of possessing a high degree of *time capital* (not surprising for an individual in his early twenties). However, it is important to realise that it is not these types of capital that he relied on to win arguments and edit wars with his fellow Wikipedia editors. Rather, Essjay relied on his supposed external expert qualifications to differentiate himself as more expert than the other editors. Further, the fact that these external qualifications later proved to be bogus actually underlines the efficacy of external authority as deployed by Essjay: just saying he has doctorates was enough to win the argument, nobody asked him for evidence!

The Essjay case shows that it is too simplistic to see the online expert field as completely distinct from the offline field and stop the analysis there. This is where scholars such as Hartelius (2010) and O'Neil (2009) arguably are limited in their accounts. They are certainly right to recognise that Wikipedia editor community has its own authority and its own *techne* – or, to convert into my terminology, that it is a distinct expert field, with its own *doxa*. And as contended throughout this chapter, both from my own empirical evidence and from analysis of literature, such a view is far closer to the true state of affairs than the view of scholars such as Wilson and Likens (2015), who fail to notice Wikipedia's authority at all. However, Hartelius and O'Neil in their different ways fail to map out the full complexity of the relationships between the two fields. To complete their analysis, these authors need to

[31] Jimmy Wales is the co-founder of Wikipedia. See https://en.Wikipedia.org/wiki/Jimmy_Wales

acknowledge that Wikipedia's field of expert knowledge production, though conceptually distinct, does not exist in isolation from the offline field of expert knowledge production. My argument is that these two fields have a specific relationship: the offline field of expert knowledge production projects its structures, its *doxa*, into its paired Wikipedia field. That is why the structures of the offline field that allow appreciation of credentials like a PhD or an MD still exist in a certain way in the Wikipedia field, as the Essjay case demonstrates.[32] This connection between the two fields develops because every actor within Wikipedia is also simultaneously an actor within the 'real' offline world.

Wikipedia editors might have created their own online community with its own rules and have developed a *habitus* to reflect sustained activity in this new environment. However, new *habitus* is not just created in a vacuum by new activity. Bourdieu made clear that no one person is free of *habitus* at any time, but rather *habitus* evolves with the change of environment. Crucially, he also highlighted that the earlier layers of *habitus* tend to be more influential on the individual's behaviour than the latter additions, underlying 'the structuring of all subsequent experiences' (Bourdieu, 1972, p. 87). Thus, editors on Wikipedia will have started with a *habitus* acquired from their participation in the offline world. Even if they were not academic experts in the offline world, they will have still participated in the broader academic field as school and/or university students, as consumers of popular science books, as consumers of other media about the subject matter that interests them and that they therefore chose to write Wikipedia pages about. So, they will retain from the offline world an understanding of academic qualifications, and as part of their *habitus* they will retain unthinking impulses associated with that knowledge: such as an impulse to think that someone in possession of a PhD is different from and more authoritative than someone without.[33]

Although the Essjay example shows features from the offline field of expert knowledge production, such as the *cultural capital* of having a PhD qualification, being projected into the Wikipedia field of expert knowledge production, it is clear

[32] Note that the mechanics of how and why symbols of offline expert authority such as PhDs and MDs are able to be influential in the online field will be explored more fully further down in this chapter.
[33] It is possible to have an internalised impulse to recognise the difference in authority that something like a PhD gives an actor, but nonetheless reject and rebel against it. However, Sennett (1980) pointed out that the key point is that authority is paradoxically *strengthened* rather than weakened through rejecting it. Like when a child who constantly rebels against the parent, still feels compelled to measure themselves against them.

that they do not function in quite the same way in the online field. The *doxa* of the two fields is not the same, so the *cultural capital* in the Wikipedia field that has to do with degrees and qualifications, is only a projection, not the real thing. For one thing, the projected *cultural capital* comes denuded of the mechanisms for its own verification. Essjay claimed extra authority on Wikipedia because he said he had a PhD and there was no means for other editors to check that claim within the Wikipedia field itself. The Wikipedia field in this respect is like a warped mirror of the offline field: it has all the elements of the offline field but these elements are changed by the process of their projection.

Another example pertinent to this discussion is the case of the American novelist, Philip Roth, mentioned at the start of this chapter. As discussed, Roth published an open letter of protest about Wikipedia, when he tried to have edits made on a Wikipedia page about the inspiration for one of the characters in his own novel, *The Human Stain*. He objected to his request being turned down by existing Wikipedia editors (Roth, 2012). The interesting point about the Roth example is not so much that his changes to a page dedicated to his own book were not immediately made, but that even once Roth had made his dissatisfaction public, the Wikipedia community still pushed back against making the change he wanted. One would have thought that there was nothing more privileged and expert in knowledge than the motivation behind your own creation, so on what grounds would Roth's authority to say one way over the other could possibly be challenged? But to think that would be to forget that it is not authority but *neutrality* that is important for Wikipedians. Roth, though undoubtedly an expert in his own work, was making a change to it without citation, and was clearly not being impartial: he was breaking the axiomatic rule of *neutrality*. In this way, his authority over the subject did not matter.

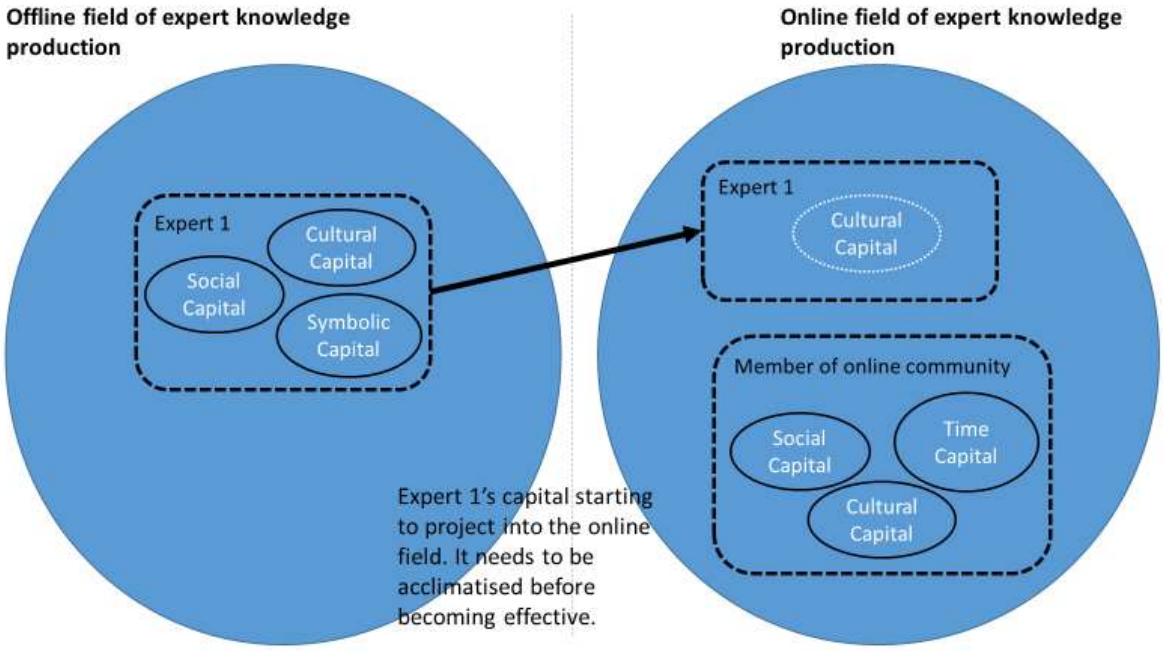

Figure 1: Offline expert's capital projecting into the online field

Roth's inability to influence an edit about his own book and the case study of EH2 interviewee both show that having a projection of offline capital - which I will call *projected capital* from here on in[34] - and nothing else to rely upon in the Wikipedia expert field, is insufficient (Fig. 1). The offline expert needs to go through a process of acclimatisation within the Wikipedia field. In Bourdieuan (1972) terms, we can conceptualise it as the external expert gaining the same *habitus* as other denizens of the community. This unacknowledged internalisation of the norms of the community, including the importance of key policies like *neutrality*, the correct language and the *techne* of how Wikipedia works, is what allows other editors to recognise them as an external 'other' no longer, but instead see them as a member of their community. As the result of the process of acclimatisation, the offline expert also becomes a local Wikipedia expert and gains local capital of different types, both *cultural capital*, e.g. *techne* of using the Wikipedia platform, and *social capital*, e.g. relationships with other editors in the Wikipedia community.

[34] Note, I am using *projected capital* in a similar way Bourdieu (1972) used *symbolic capital*: it is a mode that can be applied to another type of capital, be it *social, cultural or economic*, rather than an additional capital, in its own right. Whereas *symbolic capital* denoted the misidentification of the effects of another type of capital, *projected capital* denotes the change of efficacy of a type of capital when it is projected from the offline field to its paired online field.

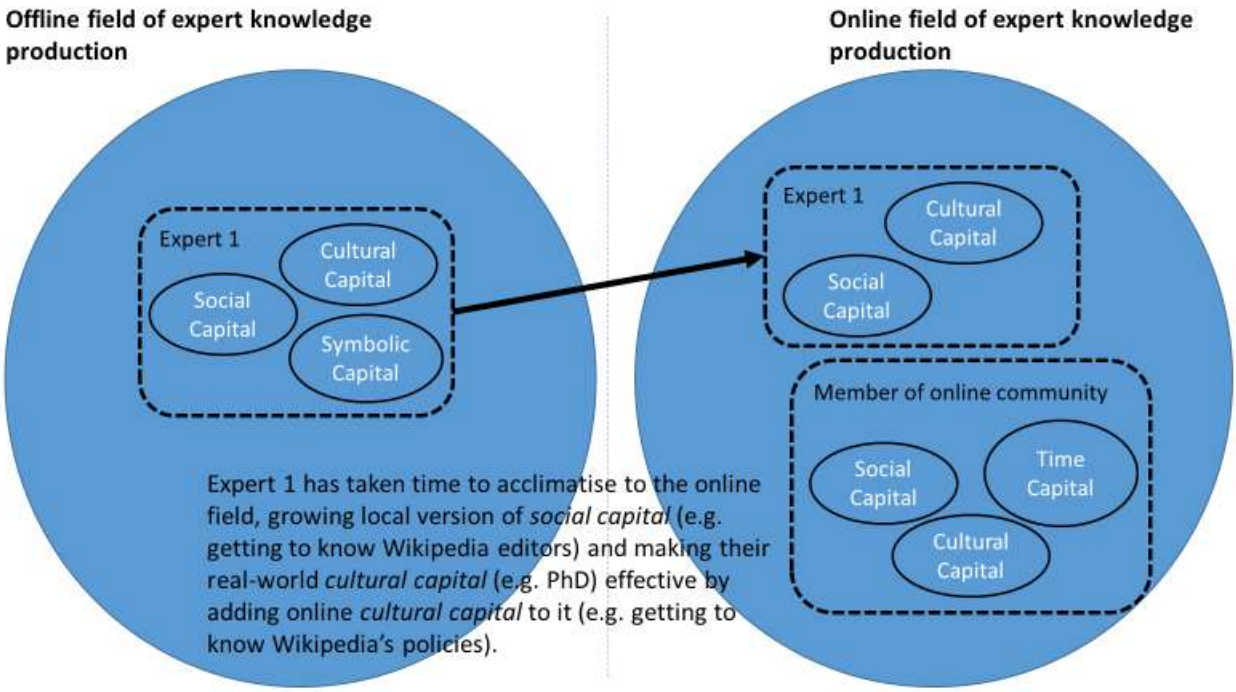

Figure 2: After acclimatisation, offline expert gains capital in online field

The new concept of *projected capital*, has a special quality which has been seen so far from both the literature and from my empirical data: it is too weak to overcome local capital on its own, without the process of acclimatisation; but once that process is complete and local capital is built, it is able to greatly augment the authority of its holder beyond what local capital alone would achieve (Fig. 2). It is as if all its beneficial qualities, all the weight it affords, is held in suspension until the process of acclimatisation takes place and *habitus* is built to match the *doxa* of the field. So, had Roth but taken time to understand the rules of Wikipedia, perhaps by engaging with its editors on talk pages and building local authority, his offline *cultural capital* projected into the Wikipedia field will quickly have started to count. Without engagement, however, it did not benefit him at all. Conversely, I would argue that Essjay's supposed external expert authority only served to augment his existing local authority. If he was new to the Wikipedia community and made random changes on the basis of having two doctorates, those changes would have been immediately reverted, as both the English Heritage and the Royal Society interviewees made abundantly clear.

Conclusion

The analysis of both empirical evidence and literature in this chapter has demonstrated that Wikipedia is a community with its own rules and culture. Foremost among the rules, determined by the process identified as *democratic levelling*, prevalent online, is the rule of *neutrality*. It is seen as more important by Wikipedia editors than the offline expert authority of the authors of a particular page. Often misunderstandings and conflict between offline experts coming to Wikipedia for the first time and existing editors revolve around the issue of *neutrality* and the related policy of *no original research*. Academic experts and expert institutions such as English Heritage and the Royal Society find it difficult to appreciate that the domain of knowledge they feel they own – their own latest research and discoveries – can be the one they will have most difficulties in making edits to, precisely because of policies like *neutrality*.

Applying the conceptual framework developed in Chapter Two, reveals which dynamics are at play during interactions between holders of offline expert authority and Wikipedia's editor community and which field such interactions take place in. Just because the Wikipedia pages that experts are trying to edit are about a science subject, for example, does not mean the Royal Society is engaging with the editor community in the offline science field. For the conversation to be in the Royal Society's own field of science, the editors would need to be attending a scientific conference or publishing a paper in a peer review journal, i.e. adopting a *techne* of the offline field and participating in the *discourse* of the offline field. Instead the conversation is happening within the online field of expert knowledge production, a sub-field of which is the Wikipedia editor community's own field. Here Wikipedia is a more dominant actor within the network of knowledge-power than the Royal Society is. It has control over the *discourse* and the *techne* and that is how it is able to frustrate an external expert body such as the Royal Society.

However, the expert institution in a situation of conflict or challenge with online communities does not immediately realise that the exchange is not actually happening in a field it normally dominates. It tries to use its own *discourse* and frame of reference and rely on its established offline *cultural capital* and is frustrated that they do not have the desired effect online. Moreover, by doing so, it invariably

triggers resistance from Wikipedia editors who do not see the Royal Society's action as justified and therefore interpret it as an attempt at domination rather than a use of authority. This makes the correct course of action clear: take time to develop the appropriate *discourse* and *techne* for the appropriate field. If the Royal Society adopts Wikipedia's *techne* and *discourse*, gaining capital more appropriate to the online field, and goes through a period of acclimatisation, then it can still be successful. This is because the Royal Society has considerable potential influence even in the Wikipedia field: its *projected capital*, cast from its own field of science, would be sufficiently strong to ensure this.

In the course of arriving at an understanding of the complexities of the initial engagement of an offline expert and the Wikipedia community of editors I have been able to apply the conceptual framework developed in Chapter Two and then go on to build my argument on its foundations, by adding new concepts such as *democratic levelling*, *time capital* and *projected capital*. I have also filled a gap in literature on Wikipedia by detailing the dynamics of such engagement. In the next chapter, I will turn to the second area of challenge for offline authority of institutional experts: the dominance of algorithms and their displacement of the expert in their traditional role of being a gate-keeper to knowledge.

Chapter 4

The rise of algorithms

> To exist is to be indexed by a search engine.
>
> (Introna and Nissenbaum, 2000, p. 171)

Introduction

In early years of the internet, lists of useful sites were produced by human experts to aid navigation for people interested in particular topics. Now that the web comprises roughly 1.9 billion websites (Internet Live Stats, 2018) made up of 4.2 billion pages (World Wide Web Size, 2018) that time is long past. As volume of content increases exponentially, so the need to navigate this volume effectively and to sort and rank it as a means to the differentiation of quality and relevance, becomes more acute. This task is increasingly performed by search algorithms, such as the PageRank algorithm underpinning Google's search engine. Other algorithms, meanwhile, are integral to the functionality of social media platforms like Facebook and Twitter. These algorithms push content to the users' timelines and news feeds, while simultaneously acting as a filter, making decisions about what is 'relevant' for each user to see in ways that are far from obvious or transparent.

English Heritage and the Royal Society are both organisations who see themselves as experts in, and champions of, a specific domain of knowledge: history, archaeology and the historic built environment in the case of English Heritage, and the sciences in the case of the Royal Society. Moreover, one of the key duties taken on by both organisations in their expert champion role is the communication of the most correct, accessible and up-to-date information to the wider public. The extent to which key information within their knowledge domain is easily findable online by search engines and effectively shareable on social media, is therefore seen as a key success metric by both organisations, impacting on their authority.

In this chapter, I will discuss the views of English Heritage and the Royal Society interviewees on the importance and impact of algorithms - such as those powering popular search engines - on their ability to communicate information to the public online. I will consider examples given during the interviews of rival, less expert and 'wrong' opinion ranked higher in Google search results – and therefore potentially influencing public opinion and *discourse* – compared to more authoritative information on that given topic provided by the experts. The competition from less expert knowledge sources that manage to appear in the top few places in Google results is seen as a particularly acute problem by experts in both organisations, because of the high proportion of users who are unlikely to check beyond the top listing of results (Beitzel et al 2007).[35]

In the first part of the chapter I will focus on algorithms behind search engines, such as Google's PageRank algorithm. I will look at case studies from English Heritage and the Royal Society which show the impact of search rankings on the two organisations' expert authority. A new type of capital will be identified – *algorithmic capital* – to allow me to describe the means through which the experts in these organisations try to compete against rivals in the online field of expert knowledge production.

In part two, different types of bias[36] affecting the ranking of search results will be considered. I will go on to explore unintended and/or hidden types of search engine bias. The argument will be built that complacency over the presence of algorithmic biases could detrimentally affect the ability of English Heritage and the Royal Society to communicate key information to the public online. I will expand the discussion from purely search algorithms to include the push algorithms that operate on social media platforms. I will discuss the impact these have in creating so-called 'filter bubbles' and the spreading of 'fake news'.

In the third part of the chapter, Langdon Winner's (2009) idea of *technological somnambulism* will be considered and reworked into a more substantive conceptual tool. I will demonstrate how the internalisation of both algorithmic bias and other

[35] The study found that 79% do not go beyond the first page of results, meaning that results out of top 10 or even top 5, may simply never be seen (Beitzel et al, 2007).
[36] Bias being understood to describe where the results of searches or rankings performed by algorithms are influenced by hidden structural features of the technology, human error, or intentional human action in a way that promotes certain results over others in the ranking.

affordances such as those presented by the utility of the interface can lead users to be complacent about the influence of technology on their behaviour. Bourdieu's (1972) paired concepts of *habitus* and *doxa* will then be deployed to explain how features of both technologically and socially determined nature are able to translate between the online and the offline fields of expert knowledge production.

Part I: Algorithmic Capital

In Chapter Three I focussed on Wikipedia as an example of an online community of practice around knowledge production. I argued that when offline experts engage with Wikipedia, that engagement is taking place in the field of online expert knowledge production, which is separate from, but linked and co-constitutive with, the field of offline knowledge production. Experts are able to use the forms of capital they gained in the offline field on Wikipedia as projected capital, but only after taking time to build local capital in the online field, as well. The question I did not consider in detail in the last chapter is why offline experts so often feel the need to engage with Wikipedia in the first place? Or, for that matter, why they feel the need to engage with any online communities of practice? In the first part of this chapter I will show that the answer is two-fold: it is connected with the public engagement and knowledge gate-keeper roles experts assume; and it is connected with the growing role of online platforms as knowledge providers.

Academic experts increasingly take on responsibility for public engagement, under pressure from governments and funders (Samoilenko & Yasseri, 2014), so they are concerned with what influences public understanding. More strategically, Habermas (1971) points out that in a democratic society it is both a duty and a matter of self-interest for scientists and experts of all kinds to take on the role of public engagement:

> The successful transposition of technical and strategic recommendations into practice is… increasingly dependent on mediation by the public as a political institution. Communication between experts and the agencies of political decision… must therefore necessarily be rooted in social interests and in the value-orientations of a given social lifeworld… it is based on a historically

> determined pre-understanding, governed by social norms, of what is practically necessary in a concrete situation. This pre-understanding is a consciousness that can only be enlightened hermeneutically, through articulation in the discourse of citizens in a community… The relation of the sciences to public opinion is constitutive for the scientization of politics. (Habermas, 1971, pp. 47-48)

The key point Habermas is making is that it is crucial for scientists to make sure that the public's 'pre-understanding' that will inform their ascent or not of a policy decision, is as well-informed as possible. Therefore, it is in the scientists' and experts' best interest to actively promote this understanding and challenge alternative, less-scientific interpretations. Habermas's view was part of a general strand of thought that worried about the perception of science by the public. Two decades before Habermas, Warren Weaver, in his role of President of the American Association for the Advancement of Science (AAAS), linked the case for public engagement directly with the self-interest of scientists, who increasingly relied on the public purse for the funding of their experiments:

> It is hardly necessary to argue, these days, that science is essential to the public. It is becoming equally true, as the support of science moves more and more to state and national sources, that the public is essential to science. The lack of general comprehension of science is thus dangerous both to science and the public, these being interlocked aspects of the common danger that scientists will not be given the freedom, the understanding, and the support that are necessary for vigorous and imaginative development. (Weaver, 1955; quoted in Gregory & Miller, 1998, p. 4)

Gregory and Miller (1998) point out that when Weaver was writing, public perception of science was generally positive as it was seen to have contributed to winning the Second World War. The main concern therefore was continuing the investment from the public purse. However, from the 1970s and through the last few decades, public perception has grown to be more ambivalent, with the benefits of the electronic revolution and other technologies lauded, but areas of controversy, like nuclear and genetic modification (GM) research, inspiring public concern and opposition (Gregory & Miller, 1998). It could be argued therefore that the self-interest of scientists in

carrying out public engagement is no longer limited to funding, but also to creating a public mandate for their research, particularly into areas that have the potential to be controversial.

The case for experts to carry out public engagement activities can therefore be summarised as the twin proposition that engagement with science and other domains of expert knowledge was: a) good for the public to be better able to fulfil their role as well-informed citizens making policy choices through democratic means; and b) good for the experts because it ensures public support for research which translates into both funding and the mandate to continue. However, this positive case needs to be balanced against challenges raised by sceptics of the public engagement enterprise. The historian of science, I. Bernard Cohen, criticised a number of fallacies prevalent in public engagement with science, for example, 'the belief in the usefulness of unrelated information such as… the distance in light years from the earth to various stars' (Cohen, 1952, pp. 78-81, quoted in Gregory & Miller, 1998, p 17).

Indeed, it is hard to disagree that this focus on miscellaneous facts that Cohen (1952) was calling out, is of little value to the public in either helping appreciate the complexity of scientific process of discovery or in being better equipped to make the kind of democratic policy decisions envisaged by Habermas (1971). However, as Gregory and Miller (1998) point out, the focus on teaching miscellaneous facts is still prevalent in activities of public engagement with science, partly because in any surveys of impact of such engagement work, knowledge of facts is far easier to measure than the less defined understanding of the scientific process (Gregory & Miller, 1998). The fallacy of confusing knowledge of facts with understanding of science or history or any other academic expert discipline has a particularly strong resonance in the online era, when any 'fact' is just a Google search away. Indeed, this connects with the second part of the answer to the question posed earlier in this chapter: why do experts feel the need to engage with Wikipedia and other online communities of practice.

The second part of the answer is that the public increasingly carry out their information seeking activity online. Recent studies by the Pew Research Centre, for example, have demonstrated that 72 per cent of Americans go online for health-

related information and of those millions of people, 77 per cent turn to Google first when they have a health related question (Fox & Duggan, 2013). Often such searches ended up on one of hundreds of online health websites run by patient communities or individual bloggers discussing health conditions and providing advice (O'Connor, 2010). Other research has shown that Wikipedia dominates the top results in Google searches and those of other search engines in areas of knowledge which the experts feel they have authority over (Bateman and Logan, 2010; Eijkman, 2010; Samoilenko & Yasseri, 2014). Wikipedia has an enormous influence on public understanding of key areas of knowledge, such as architectural history or the sciences. For this reason, offline experts feel the need to either make sure that their own content is returned higher in Google and other search results than Wikipedia, or that the Wikipedia pages returned in search results have what they see as the 'right' information.

The drive towards public engagement with science and other expert domains, the (mis)identification of understanding of the expert domain with ready access to facts about the expert domain, and the reality that most searches for facts now happen online, together combine to ensure that expert institutions such as the Royal Society and English Heritage both perceive online engagement with the public as a key strategic activity (EH3, RS1). This activity brings them inevitably into contact with, and often into conflict with, the online communities of practice like the Wikipedia editors or the bloggers and writers behind patient health websites. A case from the Royal Society illustrates the complex nature of the tripartite connection between the offline institutional experts, the local experts in an online community of practice, and the influence of search engines as gate-keepers allowing the public to find scientific content. When the Royal Society published an official report on fracking and shale gas extraction (The Royal Society, 2012) it found that the report came lower in Google search ranking than rival sources of information on fracking:

> We did a report on fracking about a year ago… [but] If you actually search for fracking on Google you get Wikipedia and you get a very lovely and well-designed anti fracking website by a group in the US….I did find that that anecdote carried a lot of currency…internally and the people were interested in the fact that we were coming below these sort of results. (RS1)

For Royal Society, the issue was that their report's conclusions was seen by their own fellows[37] as a more balanced examination of the effects of fracking than that suggested by Wikipedia or the site run by the anti-fracking activists. Not having their report appear at the top of Google results was an impediment to them being able to increase public understanding of the science of fracking. As such, the lower placement of the report in the search results was a direct challenge to the authority of the Royal Society as experts. Interviewee RS1 confirmed this concern: 'findability [via search engines] is important and is important for authority' (RS1).

The solution to the problem of the fracking report's findability adopted by the Royal Society was to use Wikipedia itself. Since the Wikipedia page on fracking was already coming top of search results in Google, the Royal Society decided not to push up the search ranking of their own report published on the Royal Society website. Instead, they worked with the help of their Wikipedian-in-residence to help edit the Wikipedia pages and get some of the fracking information from their report onto the page, to make it more balanced. They did so by following the process of using the Wikipedian-in-residence's local authority in Wikipedia and following that community's *techne* by making all the suggestions on the talk pages associated with the fracking pages first to win the trust of the other editors (RS1).

Moving away from Wikipedia to look at the wider field of online knowledge production, an English Heritage case study shows the same connection between what is trending in the traditional media in the offline field and what happens in the online field. During the English Heritage interview with EH3, the Stonehenge web pages were given as an example of key English Heritage content appearing lower than that of rivals in search results, and detrimentally so. Although English Heritage is the custodian of Stonehenge, it did not control the domain name www.stonehenge.co.uk, which was owned by a private individual. This individual's website came top in Google search results, while English Heritage's official site was not even second but a few places below. Similarly to the Royal Society case study considered above, the directors at English Heritage were concerned about the accuracy of the information being given to the public who might only check the first few search results and so would only see the unofficial website (EH1). The rival

[37] The Royal Society is a fellowship based organisation, whose fellows are the preeminent scientists in their fields, so the views of the fellows are an important driver in the organisation's policy

website www.stonehenge.co.uk would often publish views and opinions about the history of the monument that, in the view of English Heritage experts, was erroneous or unbalanced. An example would be when www.stonehenge.co.uk gives prominence to interpretations of Stonehenge's history and usage championed by modern druidic groups[38] with whom English Heritage is sometimes in dispute.[39]

In contrast to the tactics adopted by Royal Society in the fracking case, English Heritage made a concerted effort to improve the search results placement of its Stonehenge pages.[40] First of all, the three different English Heritage run websites dedicated to Stonehenge - marketing and visitor information, history and archaeology, and information about accessing the stones during solstice – were merged into a single set of pages, thus aggregating the traffic to them. Then the English Heritage web team[41] went through creating new content to answer the kind of questions they knew from analytics and search results people were interested in having answered. Finally, the team went through a process of optimising all the Stonehenge pages for search engine ranking, which included creating new content.

At the same time as the English Heritage web team made the content and Search Engine Optimisation (SEO)[42] changes to the site, there was an active public relations campaign to attract extra media attention for English Heritage's work at Stonehenge. The public relations campaign was built around the decision to build a new visitor centre there and divert one of the roads near the monument, which resulted in many traditional media outlets linking back to Stonehenge pages on the English Heritage website from within the stories they published. This contributed to the English Heritage's own pages on Stonehenge climbing higher in search results, as links from established media sources are significantly weighted in the Google PageRank algorithm (Van Couvering, 2009). This combination of work by the English Heritage web team and the concurrent PR exercise together helped achieve the goal of

[38] see http://www.stonehenge.co.uk/ceremony.php and particularly the comments section http://www.stonehenge.co.uk/visitorscomments.php

[39] An example of such a dispute would be the druid community opposing the display of a skeleton dug up by archaeologists within the environs of the monument in the museum within the new Stonehenge visitor centre operated by English Heritage (Webb, 2013).

[40] I was the leader of the English Heritage web team at the time so was responsible for solving the search problem.

[41] It is important to note that I led the English Heritage web team at the time, so I possess a first-hand knowledge of the tactics deployed which I was able to deploy in a more detailed questioning of interviewee EH3 than an external researcher would. I have discussed the advantages and disadvantages of having an active role in the events I then chose to analyse from a research perspective in Chapter 1.

[42] SEO typically involves changes to the code, content, structure and metadata of pages to increase the ranking given by a search algorithm to that page.

promoting the Stonehenge pages to be ranked first in Google search, above Stonehenge.co.uk, and keeping them there.

In both cases, the offline institutional experts, the Royal Society and English Heritage, try to engage in an online field of expert knowledge production because of the public engagement role they undertake. During the initial engagement, however, these institutional experts find that their ability to influence public opinion online is challenged by rival holders of local expert authority in the online field: the Wikipedia editors writing about fracking and the activists doing the same on their own website, or the editors of the www.stonehenge.co.uk website. It is also clear that the influence of search engines like Google plays a clear role in determining which messages – whether those of offline institutional experts, or those of their online challengers – will eventually win through and capture public attention.

To fully understand the dynamics of this kind of search engine mediated competition between offline and online holders of expert authority it is important to consider the technology and structure of the internet and the World Wide Web and to what extent they act as affordances of the successful practice of offline expert authority online. As discussed in the literature review chapter, Barabasi (1999) demonstrated that the distribution of traffic and linkages across the topography of the internet is far from equal. There is a preferential attachment effect happening on the network, also known, colloquially, as the 'rich get richer' effect, which sees some websites benefiting disproportionately compared to others.[43] This effect is exacerbated by the fact that the number of incoming links and measure of traffic are used by search algorithms like Google's PageRank to determine how high up a website comes up in search results, leading to yet more exposure and traffic (Brin & Page, 1998). So, for these dominant nodes in the network there is a virtuous circle with better traffic meaning higher search results, which in turn add further traffic.

For academic experts and expert organisations this double effect of network topology and algorithmic action can translate to a significant threat to their authority. Specifically, the near universal reliance on search engine algorithms by the public to find information online can have a bearing on the public understanding of a scientific topic and thereby challenge the institutional experts' role as educators of the public

[43] Mathematically, Barabasi's (1999) preferential attachment effect is an example of a power law distribution.

and gate-keepers of knowledge (Simpson, 2012; Li et al, 2014; Samoilenko and Yasseri, 2014). This role of gate-keeper is particularly important as it is tightly connected with the Foucauldian idea that the dominant actors in a field of knowledge-power are able to control the *discourse*, i.e. the terms of debate, the ability to judge what counts as knowledge and by extension what counts as a reliable source of knowledge (Foucault, 1977). Regalado (2007) mentions that in pre-Google days and pre-online search more generally, the role defining what counts as a reliable source of knowledge was held by academics and librarians:

> Once upon a time not so long ago in college libraries, there was a settled pattern of relationships in the research process. Instructors sent students to find information in books and journals, and librarians helped them do it. One key basis of these relationships was authority: that is, the search for reliable sources. Behind this search, however, lurked a hidden struggle over who determined reliability and who provided access. (Regaldo, 2007, p. 1)

Regaldo (2007) worries that this authority of academics and librarians as gate-keepers to reliable sources of knowledge is now being superseded by a new kind of 'authority based on popularity' (Regaldo, 2007, p. 3). This authority was determined by search engines and algorithms powering them, such as Google's own PageRank, who were fast becoming the new gate-keepers. Although Regaldo here focuses on student behaviour, complaining that they 'often perceived any results as search success… value[ing] convenience over quality' (Regaldo, 2007, p. 2), at least students still receive some academic guidance by virtue of being contained within the university system. Extrapolating the online search behaviour from students to the general public, who are operating even further from the control of the experts, makes clear that the role of experts as gate-keepers is in danger of becoming redundant.

The dominance of search engine algorithms in determining the popularity of a given website or piece of content, and therefore their effectiveness as alternative gate-keepers, leads Shirky (2009) to contend that there is a new kind of authority operating in the virtual world. Whereas Regaldo (2007) describes an authority based on popularity, Shirky (2009) goes a step further and names this authority after the very algorithms that are responsible for the disruption of the previous order. This *algorithmic authority* is seen by Shirky (2009) to be separate from the authority of

individual human experts that might be using the internet and often presents a direct challenge to them. Mathieu O'Neil in *Cyber Chiefs: Autonomy and Authority in Online Tribes* (2009), similarly argues that there is an additional, technologically determined kind of authority at play online, which he calls *index authority*:

> All sites are equally retrievable on the Web, but some are much more visible – and hence perceived as authoritative – than others. (O'Neil, 2009, p. 52)

> The power of search engines to highlight certain data and make other data disappear is considerable. (O'Neil, 2009, p. 57)

The issue that Shirky (2009) and O'Neil (2009) fall into, is that by speaking of the effect of algorithms operating on the internet as an 'authority' they give the algorithms a kind of agency, without fully working out the implications.[44] In some cases that may be appropriate. The trend is that algorithmic technology is moving in the direction of more automation in the way algorithms improve and learn, whether using so-called unsupervised deep learning techniques, or bots that are able to communicate with human actors online independently of any control by their developers. However, for other, simpler algorithms, without the iterative self-improvement and unsupervised element, talking about them having authority themselves and competing with other holders of authority is too big a stretch.

Fundamentally, such a complication is unnecessary, as all Shirky and O'Neil intend to argue is the significant impact of algorithms online. Instead of using their concept of authority, the influence of algorithms can be better captured by using Bourdieuan concepts of capital exchange. Contra O'Neil (2009), Shirky (2009) and others, I therefore see algorithms not as independent actors in the online field of expert knowledge competing with both local online experts and offline experts, but rather as a new type of capital that actors can possess online. For this purpose I will deploy the term *algorithmic capital*. Put simply, to have more *algorithmic capital* than other actors would be for the knowledge content the actor wants to attract attention to, to be positioned higher in an algorithmically determined ranking.

[44] Ascribing agency to algorithms opens up the debate about agency of the new digital class of inanimate things raging in *Science and Technology Studies* (cf. Sismondo, 2010), but following that line of argument would stray beyond the scope of this thesis.

The Royal Society case study demonstrates the effectiveness of *algorithmic capital*. Once the content of Wikipedia pages on fracking was 'improved' from the Royal Society's perspective by their Wikipedian-in-residence, including by having a link back to their report, the advantage of the higher *algorithmic capital* of Wikipedia was effectively put into service for the Royal Society's version of the 'truth' on fracking. This worked because Wikipedia's *algorithmic capital* with respect to the page on fracking was not only much higher in the online field than that of the Royal Society, but, crucially, also higher than that of the alternative view of fracking proposed by the anti-fracking activist website. By using Wikipedia's capital, Royal Society ensured that their 'correct' version of the knowledge about fracking would be found by the public first. Likewise, with English Heritage, improving the search engine optimisation of its pages, tailoring its content and benefiting from inbound links from traditional media, all served to build up its *algorithmic capital*. The moment when that capital became greater than that of www.stonehenge.co.uk, English Heritage's pages started to come top in Google's search results.

So far, the discussion has focussed on the type of algorithms that power search engines and, in particular, the PageRank algorithm underpinning Google's search engine. However, algorithms are varied and widespread in their deployment in the broader online field. Other common algorithm types include those imbedded in dominant social media platforms. For example, the placement of content in Facebook's timeline is determined by Facebook's proprietary algorithms. Twitter has recently changed how its update *Stream* is generated from being determined by time of publication, to being determined partly by relevance, which is also calculated by an algorithm (Newton, 2016). Data mining software, machine learning and deep learning techniques all used for Big Data analysis, are also different types of algorithms.

The pace of change in this area is staggering, but the concept of *algorithmic capital* I am proposing is intended to be agnostic of platform or the type of algorithm being considered, and is instead focussed on the actor within the online field who has the objective of attracting traffic to their content. This actor could be an offline academic expert publishing a report or a local challenger to expertise writing a blog or a Wikipedia entry. It can also be a non-human actor, such as a bot driving 'likes' and traffic to the content it is generating itself. In the next chapter I will analyse the

different types of bias inherent in algorithms that make this findability at times difficult to ensure, particularly for those offline experts who may have less familiarity with and control over the underlying technology.

Part II: Algorithmic biases

In this part of the chapter I will argue that, as with other types of capital, like *social, economic, cultural* or *time capital*, it is the unequal distribution of *algorithmic capital* among the competing actors that determines their position in the field. That unequal distribution in turn arises from different kinds of biases in the algorithm itself, as will now be expanded on with reference to my empirical findings.

In both the Royal Society fracking report example and the English Heritage Stonehenge web pages example, it is notable that the interviewees saw findability of their content in a positive light, overall. At the Royal Society, RS1 interviewee said findability was 'important for authority'. RS1 also said that the case of the Royal Society's fracking report appearing lower in search results than the anti-fracking activists' information 'carried a lot of currency' with senior people in the organisation. However, there was a sense from the tone of the interview with RS1 that while findability was a problem on occasion, it was one that had a solution. Likewise, at English Heritage, one of the organisation's senior directors, EH3, commented:

> There's all the kind of stuff that one can do around search and optimisation to make sure that our stuff and the right stuff comes higher up the search… So those things are within our control. Apart from that I think you just, I think internet's just ultimate democracy, isn't it? I mean everything is equal so what can you do about it? I think you just have to trust… the people to some extent as well. When I search for things, you get a list of things and you look at them and you say 'Oh, God, that's not it, that's a load of rubbish', that's something else. You've got to trust people to make judgements about what the right thing is, really, and what they're looking for. (EH3)

Another director at English Heritage, EH4, has a similar perspective:

> I just think people are going to have to get used to being more responsible with information. And they are… there's going to have to be an onus on the individual to check the information and not act upon it just because Twitter, you know, Facebook said so or Google or Wikipedia said so. And, you know, the more knowledge you have the more responsibility you should have to check that it's all right. (EH4)

These statements by two directors at English Heritage display a strikingly relaxed attitude towards issues of findability. They assume that the internet as a whole is a 'democracy' and that the 'correct' – from the expert point of view – information will always be found with a bit of 'responsibility' shown by the user. This position contrasts starkly with the concerns about the effects of search engine bias raised in the existing literature (cf. Barocas and Selbst, 2016; Hazan, 2013; Van Couvering, 2009).

Search engines, as I will demonstrate, are not only hugely powerful and indispensable gate-keepers of knowledge, but are subject to biases, and often might not return the result expected by the user or even one intended by the creator of the algorithm. They hide important sources of information and skew the balance of an argument by drawing more attention – i.e. more search traffic - to one point of view over another. Search engine bias is much studied in literature but often within different disciplines – from law and political science, to sociology, to computer science – which means that the studies tend to focus on only one or two types of bias that affects their discipline most. I have synthesised a list of 10 types of bias from literature, each of which will be covered in more detail later in the chapter.

- *Popularity bias:* in an example of a well-known and intended type of bias sites that garner a lot of traffic already are scored higher in search results than less popular sites, despite potentially being a less good fit to the question being asked by the user. This was the innovation introduced by Google's PageRank algorithm, with its creators arguing that a measure of popularity of the content being searched would produce 'better' results due to an element of crowd-sourcing of know-how and the potential for self-correction of anomalies over time (Brin & Page, 1998). However, this is still a bias and can unfairly exclude

more relevant content to the question being asked by the user, if that content is new and/or not popular with other users. [45]

- *Link weighting bias:* closely connected to the above, algorithms like PageRank calculate the position of the site in search results according to not only relevance or the popularity of the site itself but the popularity of the kinds of sites that have inbound links to this site, thus further re-enforcing existing traffic advantages enjoyed by popular and influential websites (Brin & Page, 1998).
- *Sentiment bias:* some search engines weigh their results by user generated sentiment rankings such as 'followers', 'likes', '5-star votes' etc. Example being search engine algorithms powering search within the Facebook and Amazon platforms (Ott et al, 2011).
- *Optimisation bias:* developers and marketers can use their knowledge of what weighting is given by the algorithm to particular features of a website's structure and taxonomy to increase its relevance score (e.g. titles, sub titles, presence of key words, presence of alt text and other accessibility features) in a process known as Search Engine Optimisation (Van Couvering, 2009).
- *Curatorial bias:* this emerges when search engines that are perceived by the public to be driven by neutral automated algorithms actually amend the placement of some results by the use of human editors/curators. This is evidenced in the controversy over Facebook and Google introducing 'trending' topics into search results by human intervention, or taking results away because of controversy or 'right to be forgotten' (Hazan, 2013).
- *Own products bias:* this sees platforms such as Google, for example, placing results to their own products, like Google Maps, above results from competitors in the way that would not happen if the listing was purely due to relevance or even to some of the other biases like popularity (Hazan, 2013).
- *Personalisation bias:* this occurs when search results are amended on the basis of the searcher's identity and associated history, location, friend recommendation, previous actions etc (Simpson, 2012).

[45] Although the discussion is about search engines, it is noteworthy that a similar *popularity bias* is evident when findability is driven by human actors, like bloggers linking manually to other blogs, rather than search engines. There is a strong predisposition among new bloggers towards linking to well-established popular blogs, so making them even more popular (O'Neil, 2009), which is just a sub-set of Barabasi's (1999) rich-get-richer effect.

- *Training bias:* these are biases introduced at the beginning of the process of algorithm's development, when the algorithm is tuned on a smaller subset of data chosen by human actors in order to improve the algorithm's predictive accuracy (Barocas & Selbst, 2016).
- *Developer bias*: this is where the human developers of the algorithm consciously or unconsciously introduce their own biases in setting thresholds, triggers, rules and other key decision points within the algorithm code (Barocas & Selbst, 2016).
- *Availability bias*: this is caused either by the index being completely blocked as Google's search engine is in China or, vice versa, by content not being indexed (behind paywall or not yet digitised or not yet spidered) which means that when relevance and popularity are being calculated not the full range of possible data is included in that calculation, potentially leaving out more relevant content because they are housed on Chinese websites, or behind paywalls (Harzing, 2013).

Such biases are seen by researchers as having the potential to have significant impacts. The case studies being analysed as part of this research project evidenced a number of these bias types in connection with English Heritage, the Royal Society, or both.

The corrective strategies adopted by English Heritage to push their information higher in search rankings successfully were discussed in the first part of this chapter. That work can now be reassessed using the taxonomy of algorithmic bias types above. It is clear that the English Heritage digital team targeted the *popularity bias* via rewriting content, adding images, and the *optimisation bias*, via adding key words and good titles and sub-titles. In doing this, the search results were biased in English Heritage's favour, so increasing the institution's *algorithmic capital* over and above the amount of capital possessed by the rival websites. Indeed, the ability of the expert institution to affect this change with its own resources may present an explanation for the more positive attitude and less awareness of the risks of search bias than was expected during the interviews. There may be an unspoken assumption that good content and search engine optimisation work by digital experts within the organisations *will always* be able to counter any search placement

issues.[46] Thus, the interviewees may have been less sanguine if the remedial action in the cases of Stonehenge was not as successful. In both English Heritage and the Royal Society, interviewees were aware that a significant effort was expended by their digital teams to correct the issue, which makes this complacency noteworthy and it is something that will be picked up again in this chapter.

Another explanation of this optimism could be that, as national institutions, both the Royal Society and English Heritage have well established relationships with the traditional media, whether television or the major newspapers. This means that they have a way to manage their media exposure to correct at least some ill-effects of any search bias that may be affecting them. The English Heritage Stonehenge example, where the extensive public relations campaign around the opening of the visitor centre helped drive traffic to the English Heritage owned website, illustrates this well. This is an example of one of the other types of bias affecting search: the *link weight bias*. As is well established, this affects ranking of sites in search results on the basis of the traffic dominance and what Google's PageRank algorithm names the 'authority', of the linking page (Van Couvering, 2009). Therefore, established, traffic-rich media outlets like bbc.co.uk, or online versions of newspapers, like *The Guardian,* will exert considerable link weight bias on search results for the site they link to. Media coverage of the English Heritage visitor centre meant multiple links from traffic-rich media websites to English Heritage's own website.

Thus far, the types of bias evidenced from empirical data are both common and well known, with even non-technical interviewees at the two organisations aware of their influence. *Popularity*, *link-weight* and *optimisatio*n biases are all relatively simple to change given the availability of the right type of resources (trained digital experts, media contacts). However algorithmic bias is not limited to optimisation. More interestingly, English Heritage interviews present some evidence for the presence of more hidden biases affecting *algorithmic capital* in the online field, as well. Interviewee RS1 mentioned how the search results users receive are altered if they conduct the search within the Royal Society headquarters:

[46] It is worth noting that the interviews took place before the explosion of concern about 'fake news', 'filter bubbles' and 'echo chambers' that may have made the interviewees more wary of holding such a naïve view had they been interviewed today.

> I personally think findability is very important for authority although I think we face less internal organisational pressure to get up the rankings. Partly maybe because the search has moved on and it's all personalised now so actually if you're searching for something in this building often the Royal Society's website does come top just because they're doing it by IP address and all that sort of stuff. (RS1)

This is an example of *personalisation bias* affecting search results. The personalisation introduced by Google and other search engines and social media platforms can broadly be defined as the use of a user's personal information to present pre-filtered and pre-prioritised search results, with the assumed benefit that these search results would thereby be more relevant (Simpson, 2012). The kind of information a search algorithm would use for the purpose of setting the filter, ranges from IP address and device information, to the much more comprehensive information built up if users create an account and conduct their searches in a logged in state. This information would typically include search and navigation history; knowing their friends and contacts and, by extension, what they are interested in; and full access to data in any of the apps from the same provider, like Gmail for Google (Hazan, 2013). This will especially affect members of staff within these institutions who may be using social media accounts or cloud-based tools like Google Docs and Google Hangout that are connected to Google+ accounts in the background.[47] They would over time homogenise their search results on Google producing the different search experience RS1 mentions above.

A number of researchers (Simpson, 2012; Hazan, 2013) worry about the potential of the quest for ever more 'relevant' personalized search results to create significant distortions, excluding or de-prioritizing information from search results that would have been of benefit in ways the algorithm had failed to predict. The effect of this is often a homogenization of results returned for particular types of users and the removal of serendipity in being able to find something not originally envisaged that nevertheless becomes important.[48] It is pertinent, therefore, to note that the Royal

[47] It is worth noting that researchers of all types are particularly heavy users and early adopters of Google family of free to use web enabled apps such as Google docs, Gmail, Google + etc. due to drivers both of cost but also because of the need for easy collaboration with other researchers across vast geographical areas (Schuster, 2010). This means that expert users may be more susceptible to personalisation biases of these types.

[48] For savvy users who are aware of these effects this may not necessarily be a problem, as they are able to turn off this functionality from within search engine settings.

Society interviewees RS1 and RS2 observed that senior decision makers in the Royal Society were unaware of this issue, accepting metrics about the findability of key Royal Society material online as facts rather than shifting indicators affected by bias. My experience as a participant observer at English Heritage and my interviews with senior directors there (EH3, EH4) led me to conclude the same about decision makers in that organisation as well, at least during my period of observation 2010-2012.[49]

Ignorance of the effects of hidden biases, like *personalisation bias*, has the potential to adversely affect organisations with institutional expert authority, in that decision makers within these institutions, who may not themselves be tech savvy, can make unwarranted assumptions of the positivity of search results. They may think their content is more findable than it actually is. This will lead to a misleading impression of the effectiveness of their communication with the public. The *algorithmic capital* that they think they have in fact becomes illusory. In turn that is likely to produce complacency, with the organisations in question not trying to improve search engine optimisation or conduct other corrective measures because they are unaware that there is any problem to fix.

The danger in this complacency effect comes from the assumption that because algorithms are (supposedly) based on dispassionate, objective calculations, they can be trusted. This assumption makes us not pay due attention to the effects of a potential bias, in contrast to the way we have been accustomed to do in the work of human – and therefore subjective, fallible – actors. This different attitude to bias of machines versus human bias can be seen in the way interviewee EH3 argues that the dominance of search engine companies like Google needs to be seen in context of the dominance that has long been enjoyed by big media proprietors:

> I think [Google's dominance] is no more of a risk than the BBC or Murdoch or anything else that controls channels of communications. And it's a lot more democratic than a lot of them but there are probably smaller risks than previous systems where everything had to be channelled through a very small

[49] It is worth pointing out that since the explosion of 'fake news' and 'filter bubbles' as concepts in public consciousness after the 2016 US Election, the situation may well be very different if the interviews with the Royal Society and English Heritage were conducted today. It is easy to imagine that appreciation of personalisation bias will be much higher among decision makers in these institutions.

> funnel before it goes out to the wider world. I suppose if Google really chose to abuse it they could and how do you know whether they're abusing it? (EH3, 47)

When we fully consider the analogy that interviewee EH3 drew between Murdoch and Google, the underlying assumption of the interviewee seems to be that it is the conscious, intentional bias that would be the threat (if indeed the threat ever materialised). That is what Murdoch seems to represent for EH3: an intentional control over the editorial line, maybe unacknowledged but nonetheless an open secret. Somehow, because Google exerts control in less direct ways than the caricature view of a hardnosed newspaper proprietor telling editors what to print, it is given benefit of the doubt by EH3. At the same time, there is a contradiction obvious in the last sentence 'how do you know whether they're abusing it', normally if we don't know something, it makes us more worried. Why does this not seem to be happening with EH3's views on Google and how its algorithm might be biasing search results? It seems to be a clear case of a more complacent attitude adopted to bias of machines, particularly less obvious, hidden bias, than bias of human actors.

Joshua Hazan (2013) has written about similar cases of complacency connected with perception of search results:

> In reality, it seems much more likely that a user's conception of relevance is influenced by the search results. Most people are likely to believe that the first listing they see is the most relevant listing. Therefore, instead of switching to Bing or Yahoo! if the results do not appear in the order the user expects, *the user simply modifies his perception of the website's relevance.* (Hazan, 2013, p. 814, my emphasis)

The last sentence is critical in understanding why so many researchers are concerned about hidden bias of algorithms in search results: it has a habit not only of being missed by the user but also of being internalised by the user, possibly changing their future behaviour. Because of this, the effect can last beyond a single event of using an algorithm to conduct a search. To use the Royal Society's fracking report case as an example, a user whose past search behaviour and the preferences of their friends tend towards green issues, may get the anti-fracking website to come up higher in search results than the Royal Society's report due to personalisation

bias. They may have earnestly looked for an objective word on the issue. They may even have expected an official report by an august academic body to come top in the search. However, because it did not, Hazan's insight is that they are likely to assume the Royal Society's report lacks importance. Having internalised that impression, they are less likely to click on that link and read it for themselves. Hence the long-lasting effect of an internalised bias.

In a similar vein, Van Couvering (2009), in her discussion of different types of bias affecting search engine results, suggests that this misplaced trust in the objectivity of search engines should be considered a type of bias in itself, since its impact is so significant. However, I would argue that it is more precise to think of the effect of misplaced trust in search engine objectivity as a multiplier of the effect of existing biases, making the impact of other biases considerably more severe and more long-lasting, as the future behaviour of the users is thereby changed.

Although, search algorithms are not the only algorithm type through which *algorithmic capital* could be acquired online, and search biases, such as *optimisation*, *link-weight* and *personalisation* bias, are also not the only sources of algorithmic bias, the misplaced trust effects still seem to apply to *any* algorithm. Barocas and Selbst (2016), for example, focus on hidden algorithmic bias in any analysis of large data sets, not just search. They identify some new types of bias that are universal for any algorithm, such as *developer bias*, *index unavailability bias*, and *training algorithm bias*.[50] Like Hazan (2013) and Van Couvering (2009), Barocas and Selbst conclude that algorithms, through the biases possible in them, have the effect of causing users to suspend their usual disbelief, inadvertently increasing the scale and impact of the bias because they are not preparing counter-measures for it (Barocas and Selbst, 2016).

Algorithmic Capital and Social Media

Some of the most wide-spread and influential types of algorithm apart from those underpinning search engines, are the push-type algorithms deployed on social

[50] See start of Part II of this chapter for an explanation of these types of bias.

media platforms like Facebook and, more recently, on Twitter. These algorithms parse through large amounts of content and promote – or 'push' – some but not other bits of content onto a social media user's timeline, in effect acting as a filter. Just as Google search results are filtered based on characteristics like your previous behaviour and that of your friends and connections, as has been discussed above, so these social media filters take in hundreds of individual characteristics connected to each user to decide which content to promote to their timeline. This gives rise to *personalisation bias* on social media platforms.

At a global level, one particularly notorious effect of *personalisation bias* affecting social media algorithms has been trending in the news in connection with the American Presidential Election of 2016. Specifically, Facebook, as well as other social media platforms, are being accused in generating what is variously referred to as 'echo chambers' (Krasodomski-Jones, 2017) and 'filter bubbles' (Pariser, 2011),[51] whereby algorithms inadvertently filter out whole subsets of opinion or viewpoints and promote other types of opinion by making assumptions about what type of content would be relevant to a user. Since the American election of November 2016, there has been a spike of publications in academic literature (cf. Busby, 2017; Spohr, 2017; Shu et al, 2017) arguing that algorithms are helping to spread 'fake news'. Shu et al (2017) conclude that:

> Users on social media tend to form groups containing like-minded people where they then polarize their opinions, resulting in an *echo chamber* effect… [and] increased exposure to an idea is enough to generate a positive opinion of it… As a result, this echo chamber effect creates segmented, homogenous communities with a very limited information ecosystem. (Shu et al, 2017, p. 4)

It is worth remembering that although after the November 2016 election, Facebook has been much criticised for the impact of its algorithms in allowing the targeting of disaffected voters in aid of the Republican campaign, earlier in 2016 Facebook 'trending' feature was *criticised for doing the opposite* and appearing to disproportionately exclude conservative/Republican news and comment in USA (Hunt, 2016). Back then it emerged that Facebook employed human editors to

[51] The two terms are often used interchangeably, but 'filter bubble' is more commonly found in academic *discourse*. However, perhaps more pertinently Lum (2017) points out that 'echo chamber' has more pejorative connotations when used to describe people affected by the phenomenon.

‘curate’ this list after it has been generated by an algorithm. This raised the possibility that the editors in charge could interfere in the order of news items being presented in a way that was influenced by their own (apparent) leftward political leanings, de-prioritising material from the political right side of the debate. Ironically, Facebook’s reaction to the criticism of this editorial policy was to deploy more algorithms to make judgements over what is promoted in the timeline or featured in the ‘trending’ news space, rather than human editors.

Whether through editorial bias of human editors or through personalisation bias of algorithms creating a filter-bubble effect, or even a combination of the two, it is clear that there is an acute issue with the trustworthiness of information online. It is also clear that expert information and content are not immune from this effect, particularly in domains of heightened politically-charged debate, such as climate change, vaccination or fracking science, or the diversion of funds to look after historic buildings and stately homes when budgets for social services are being cut.

Finally, it is important to place the effect of algorithms on social media into a broader context. The identification of filter bubbles as the cause of fake news is becoming a contested are of debate in literature, with scholars such as Allcott & Gentzkow (2017) arguing that it is not filter bubbles or echo chambers but rather the ability of any individual to potentially reach millions with their message on social media platforms like Facebook and the propensity of people to share more extreme and attention catching messages that has a bigger effect on enabling fake-news to spread so effectively:

> Social media platforms such as Facebook have a dramatically different structure than previous media technologies. Content can be relayed among users with no significant third party filtering, fact-checking, or editorial judgement. An individual user with no track record or reputation can in some cases reach as many readers as Fox News, CNN, or the *New York Times.* (Allcott & Gentzkow, 2017, p. 211)

> Fake news arises in equilibrium because it is cheaper to provide than precise signals, because consumers cannot costlessly infer accuracy, and because consumers may enjoy partisan news. (Allcott & Gentzkow, 2017, p. 212) [52]

Note that Allcott & Gentzkow's (2017) argument for a more psychological and economic explanation for fake news does not mean that algorithms filtering news through *personalisation bias* does not have an effect, just that there may be additional explanations that are also, or more, influential. Indeed, Spohr (2017) found a complex combination of behavioural and algorithmic factors at work when he reviewed post-Trump and post-Brexit studies of 'fake news'. It is likely that it is the combination of all of these factors, the algorithmic echo chamber / filter bubble effect, the highly-scalable nature of communication, human psychology and intentional manipulation and targeting strategies deployed by political (and, allegedly, rogue) actors (McCarthy, 2017), that enables the 'fake news' effect and was at play in 2016. In the next chapter I will go on to explore some of these other more cultural and behavioural features of social media in more detail, picking out those that emerged from the interviews at English Heritage and the Royal Society.

In summary, it is clear that expert institutions like English Heritage and Royal Society are being affected by algorithmic biases in their attempts to communicate and engage with the public and spread their message. This could happen through the effect of algorithmic biases on search results or on how information is promoted on social media channels, though, as the effect is hidden and often internalised, it is very difficult to say what the extent and the impact of it is. There is evidence from my empirical data of *popularity, optimisation, link weight* and *personalisation* bias having an effect in the two case studies considered in this chapter, but it is harder to tell if *developer bias*, *availability bias*, and *training bias* are also having an effect. What is apparent from the empirical data is that there is a certain sense of complacency around the impact of search biases evident from the Royal Society and, in particular, English Heritage interviewees. Such complacency multiplies the effect of algorithmic bias and thereby introduces an element of unpredictability in search placement of content or its social media shareability. This should be seen as an inherent

[52] Allcott & Gentzkow (2017) also develop a very useful economic model that goes beyond how technology enables 'fake news' and considers the reasons why individuals are prompted to create such news stories in the first place, though this is beyond the scope of this thesis.

characteristic of *algorithmic capital*. Without this unpredictability, *algorithmic capital* would be too functional a concept: a given input always produces a given output; for content to appear higher in search results, it would simply be necessary to follow a certain series of steps in improving SEO. However, hidden biases make the pattern more complex and, therefore, acquiring *algorithmic capital* less straight forward. As with other forms of capital identified by Bourdieu (1972), it is the difficulty in acquisition that defines the value of *algorithmic capital* as a means of securing the position of its holder within the hierarchy of knowledge-power relations in their field of practice.

Part III: Affordance and *technological somnambulism*

I have, so far, analysed a number of biases that affected the findability of offline institutional experts' content. I will now use the concepts of affordance (Gibson, 1977; Norman, 1988) and *technological somnambulism* (Winner, 2009) to explain how the hidden nature of biases and the utility of the interface help to give rise to complacency among actors in the online field. Complacency magnifies the negative effect these biases have on experts' *algorithmic capital* and this directly challenges their authority in the online field vis-a-vis other actors. I will then use Bourdieu's (1972) paired concepts of *habitus* and *doxa* to explain the way capital can project not only from the offline field to the online field of expert knowledge production, but also in reverse. I will demonstrate that the effect of *technological somnambulism* reveals how the *habitus/doxa* mechanism works, since the internalisation of algorithmic biases and affordances of utility can best be understood as a formation of a new type of *habitus* within an individual from the *doxa* of the online field.

Interviewee EH3 mentions the importance of having a network of trusted sources online that you can use to filter the great volume of information as one of the reasons why they were more sanguine about search results biases:

> Quite often, when I look at Google… obscure things, actually what you will get is not the thing itself but you will get references to it in articles... Particularly if there have been articles in the national press, or something, that is what will come up. So that in itself is a kind of endorsement, it's that sort of third party

> endorsement which I suppose really enforces authority, doesn't it? So I think if something is actually genuinely worthwhile and good then I would kind of have some faith. Even if the originator had a crappy website that if it's genuinely worthwhile then enough people will have kind of picked it up so that it will start to bubble up. It does mean that you have to kind of trawl through a bit but you start to see several references to the same thing and think: 'oh well, perhaps there's something here'. And then you track it down and dig deeper. (EH3)

It is interesting to note EH3's mention that even those with a 'crappy website' can have authority if its 'worthwhile', which is evidenced by the number of people who have 'picked it up' and linked to it. It suggests that the interviewee puts a lot of trust into a direct link between quality, as experts would assess it, and findability: *if it's worthwhile it will be found and promoted by others*. However, such a belief is problematic and potentially hugely damaging as has been discussed in connection to the 'fake news' phenomenon in the previous part of this chapter. As has been demonstrated by English Heritage's own experience with its Stonehenge web pages, it is not necessarily quality that drives findability by search engines, but rather biases like *optimisation bias*, *popularity bias* and *link weight bias*. After all, the worthwhileness of Stonehenge pages from an expert point of view is not what changed to make them more findable. Before English Heritage Stonehenge pages improved their content and search engine optimisation, they did not attract as much traffic from Google as stonehenge.co.uk, a far less accurate and, from an expert perspective, lower quality website.

So, it is not necessarily the case that, however 'crappy' the website, if it's worthwhile it will be found. It might still be found *despite* its issues, but, crucially, nowhere near as easily as it would have been found if things such as search engine optimisation were fixed. This begs the question, how many other websites, which experts might think are 'worthwhile' from the point of view of content quality and accuracy, are not being found by the public because of search engine biases, but at the same time are not being improved because the experts complacently believe that 'quality will win out'? Hidden biases like *personalisation bias* make this worse because the issue is made even less tangible in the experts' perception and so harder for them to question their own assumptions of the superiority of their content.

The complacency induced by algorithmic biases recalls Langdon Winner's (2009) concept of *technological somnambulism*. Winner argued that the really interesting, philosophically and sociologically-speaking, effect of modern communication technology is that it shapes society most powerfully when people become unaware of it. Narrow concerns such as ease of use and low cost distract us from profound changes to such things as right to privacy, to take one example:

> The concept of determinism is much too strong, far too sweeping in its implications to provide an adequate theory. It does little justice to the genuine choices that arise, in both principle and practice, in the course of technical and social transformation… A more revealing notion, in my view, is that of technological somnambulism. For the interesting puzzle in our times is that we so willingly sleepwalk through the process of reconstituting the conditions of human existence. (Winner, 2009, p. 107)

As Winner suggests, one of the key drivers underpinning *technological somnambulism* is the effect of utility of new technology which distracts users from any other consequences of technology. The design and utility of technology and its interfaces with users, have been analysed for the past two decades from the perspective of affordances. This concept has its origins in conceptualisations of the mechanics of vision proposed by Gibson (1977, 1979). It was then developed and applied to ideas of interface, its design and the way it is used, by Norman (1988, 1999). Affordances can be understood as either enablers or constraints provided by technology to the socially and cultural determined behaviours of the technology's users through the design of that technology's interfaces.

The concept of affordance has been influential because, to a degree, it is able to reconcile the competing claims of *Technological Determinism* and the *Social Construction of Technology* schools of thought. Technological determinism has been largely discredited for not taking account of how individuals and society collectively create and shape technology (Bijker, Hughes and Pinch, 1987). Certainly, my analysis so far makes clear that behaviours and trends in the offline fields of knowledge production[53] have a determining effect on the evolution of technologies

[53] Here I mean not just the offline field of expert knowledge production I have mostly focussed on, but the wider fields of knowledge communication, education, engagement that would encompass, for example, the traditional media of television and newspapers.

and structures of the online field itself. To take one example, in the case of Wikipedia's biographical pages, there is evidence of events trending offline in traditional media influencing which Wikipedia entries get created (Graham, 2015). Similarly, research demonstrates that content volatility – the number of edits and reverts on Wikipedia – follows offline events and controversies (Yasseri et al, 2012). As a secondary impact of such volatility, new rules are known to have been developed by the Wikipedia *SysAdmin* community to allow them to limit the number of edits and reverts to these highly topical or controversial pages, showing impact not just on content but on policy and rules underpinning the *techne* of the online field (O'Neil, 2009). Visits to the most popular Wikipedia pages then influence how high in search results topics appear, as algorithms such as PageRank take account of the popularity of each page. Algorithms in turn evolve by being 'trained' on the sets of results they are exposed to (Barocas & Selbst, 2016), so the effect of social construction moves from content and topology to the code of the algorithms themselves.

My own empirical evidence also reveals impact of the offline field's social and cultural events on the technology and platforms underpinning the online field. During the Royal Society interviews, interviewees RS1 and RS2 separately mentioned that policy positions which touch on sensitive areas in the news or which are an answer to government priorities of the day were seen by the Fellows and the Governing Council of the Royal Society as particularly important to appear authoritative on, which means that the Royal Society content on these topics needed to be findable online (RS1, RS2). Therefore, it was not a coincidence that it was the fracking report which the Royal Society invested extra effort in to make sure it is findable, rather than another report. After all, in 2012, when the report was published, fracking was becoming a significant media story.

Nonetheless, abandoning technological determinacy completely has left a conceptual gap. Scholars like Winner (2009) retain a sense that technology, though socially constructed, somehow still exerts a powerful influence. Affordance is the conceptual tool that seeks to capture that effect without going all the way to claim that human actors lack free will in the choices they make.

Using the argument being developed in this thesis, affordances of the user interface should be understood as exerting a certain pressure on users that is directly connected to the utility of the interface and the *time capital* of the user. As discussed in the previous chapter on Wikipedia, *time capital* has a significant influence on user behaviour online. The more content we have to wade through online, the shorter the attention span we devote to each activity and, proportionately, the more premium is put on making the experience of accessing this content in a fast, clear and convenient way. However, in alleviating the stress of our busy lives, utility creates a pressure of its own: when faced with two options in the online field it is hard to resist the choice of the more convenient one. This drive towards convenience and utility is a key aspect of the *doxa* of the online field, on a par with algorithmic bias itself. It is evidenced by there now being a whole industry in the digital world focussing on usability, with specialisms in user experience, user research and the design of user interfaces (cf Nielsen, 1993).

This pressure of utility triggered by the affordances of interfaces comes out clearly in the cases considered in the earlier parts of this chapter. The website www.stonehenge.co.uk has a URL that is shorter and easier to remember than that of the official English Heritage website www.english-heritage.org.uk/stonehenge. Meanwhile, the anti-fracking activists have a 'lovely designed' anti-fracking website versus the Royal Society report in its functional pdf format. In each case a feature that makes the rival non-expert site more usable or attractive leads to its greater popularity, increasing traffic, which in turn influences the search via *optimisation* and *popularity biases*, leading to a higher placement in search results. This demonstrates how affordance can work through the mechanism of an algorithmic bias affecting search results.

However, the best example of utility affordance that arose during the interviews was only tangentially linked to search. This case concerns the statutory National Heritage List for England (a register of protected historic buildings, referred to as 'listed buildings') which was digitised and made available to the public by English Heritage via the www.lbonline.org.uk website. The issue, according to interviewee EH3, was that users were found to be getting out-of-date information on which building was officially 'listed' because another English Heritage managed website, www.imagesofengland.org.uk, was more popular with users, with much higher traffic.

Unlike www.lbonline.org.uk, this more popular website had images of the listed buildings and not just text entries. However, because www.imagesofengland.org.uk was a ‘point in time’ archive of buildings funded by a Heritage Lottery Fund grant, it was not kept up-to-date when the official list changed, in the way www.lbonline.org.uk was. According to EH3, the view of senior management was ‘when there are things in our own control, like Images of England, it's obviously quite important to be very explicit about what that is [i.e. an archive not an updated current resource]’ (EH3).

English Heritage managers soon found out, to their shock, that English Heritage’s own experts were sometimes using www.imagesofengland.org.uk rather than the official www.lbonline.org.uk site, when checking up listing information on a property in the course of their official duties. This happened despite them knowing it was not kept up-to-date (EH3). The convenience of having an image outweighed the risk that the information was out-of-date even in the judgement of experts, changing their research behaviour in the online field. It is important to note that images were not strictly speaking required for the English Heritage experts to carry out most of their duties and in those cases where a visual aspect of a building in question had relevance, there were other official archives they could access (like the paper based photographs kept in the National Monument Centre library in Swindon). The point is that a website with images was *easier to use* when conducting lengthy searches, even when images were not required. And when they were, it took a lot longer going through a paper archive than consulting the www.imagesofengland.org.uk website. This example shows how the pressure of utility can undermine the authority of experts through its contribution to the effect of *technological somnambulism*. It can lead experts to adopt practices in the online field that they would not think of doing in the offline field of expert knowledge production.

Winner does not mention algorithms specifically in relation to *technological somnambulism* when giving examples of affordance effects. Indeed, there is a live debate in the literature whether algorithmic effects on users are themselves a kind of affordance. Scholars in the perception school of affordance, such as Lu & Cheng (2013) and McVeigh-Schultz & Baym (2015) insist that since the classic definition of affordance was connected to vision and the senses more broadly, being able to *perceive* the interface is crucial for there to be an affordance effect. This position

arguably would exclude technological effects that are invisible, such as algorithmic bias. On the other hand, boyd (2010) argued that a range of features of the online world, from the network effect to algorithms, are all affordances not just despite the fact that many of their effects are not perceived by the users, but precisely because of it (boyd, 2010).

My position sides with boyd (2010). I agree that algorithms provide affordance effects on their users, primarily for two reasons. Firstly, because affordance is intended to be a way to capture a sense that technology is having an influence on its users that is less ideological than full technological determinacy. As such, excluding all imperceptible effects of technology would seem to make it a less useful tool, since the strong sense is that these invisible effects not only exist, but, as I have argued above, are sometimes greater than the visible ones. Secondly, although algorithms themselves operate outside of our perception, we interact with the effect of their work through interfaces, as with any other technology. As such, algorithms can have a double somnambulistic effect: first, through the affordance of algorithmic biases at the back-end, and, second, through the pressure of utility affordances created by their own front-end interfaces. An example of this is the Google search engine. Apart from the biases of the PageRanlk algorithm powering it that have already been discussed, the search results are displayed in particular ways on different devices. This display creates specific affordances; for example, making users less likely to click on search results that do not appear top of the first page of results (Hazan, 2013).

Arguably, utility of *any* aspect of technology can be said to be somnambulistic and the greater the take-up of that technology, the greater the cumulative effect. By accepting that algorithms and their bias effects are a type of technological affordance, it becomes clear that due to the prevalence of algorithms and their influence on user behaviour discussed above, algorithms are arguably the technology with the single greatest somnambulistic effect. The complacency evident in the case studies considered so far, particularly in the comment on *personalisation bias* made by RS1 above, shows how even highly educated experts can fall into the *technological somnambulism* trap.

Dynamics between the offline and online fields

In Chapter Three, in the context of Wikipedia, I have outlined the mechanism through which the offline experts' capital can be accounted for in the online field. I described this process as a projection of capital, which then had to be acclimatised. Based upon the analysis in this chapter, it is evident that the relationship between the offline field of expert knowledge production and the online field of expert knowledge production is two-directional. The www.imagesofengland.org.uk case considered above, for example, indicates a two-way influence between the affordances of the interface and the behaviour of actors. In the first instance, experts were led into using an inappropriate system due to the pressure exerted by the affordance of utility of that interface. However, the interview with EH3 then indicated that the strong user preference for images in looking at listed buildings eventually led English Heritage to redesign the official website with the list of designated historical buildings to include images as well. A case of social behaviour influencing the interface and thereby the online field of expert knowledge production.

It has already been mentioned in Chapter Two that the divide between the offline field and the online field is at most conceptual, retained because it is useful, rather than being a real, well-defined boundary. The two fields are not only related but co-constitutive, each influencing the other. The exchange between the offline field and the online field of expert knowledge production takes place in both directions and it is not just projected capital that is transferred. What is happening at the same time as a projection of capital is the *doxa* of one field affecting the *doxa* of the other, as I will now go on to demonstrate.

Bourdieu (1972) examined how an actor's *habitus* – the unconscious effect of the internalisation of the *doxa* within the actor – might evolve and change. Bourdieu saw *habitus* evolving in a semblance of a cascade:

> The *habitus* acquired in the family underlies the structuring of school experiences… and the *habitus* transformed by schooling, itself diversified, in turn underlies the structuring of all subsequent experiences (Bourdieau, 1977, p. 87)

This means that as an individual's life progresses through key stages sufficiently different in their *doxa* (family, school, work, marriage etc.), so the *doxa* of the earlier stage is internalised into *habitus* which then structures the way the *doxa* of the next stage is experienced and in its turn becomes *habitus* itself. Moreover, Bourdieu envisages an agonistic relationship between groups holding different *habitus*:

> Practices are always liable to incur negative sanctions when the environment with which they are actually confronted is too distant from that to which they are objectively fitted. This is why generation conflicts oppose not age-classes separated by natural properties, but habitus which have been produced by different *modes of generation*, that is, by conditions of existence which… cause one group to experience as natural or reasonable practices or aspirations which another group finds unthinkable… (Bourdieu, 1972, p. 78)

Bourdieu developed his concepts in an anthropological setting – hence references to family and generations – and applied them to problems of sociology. They can usefully clarify the exchange between the offline and online fields in my own argument, based as it is on Bourdieuan foundations. If *habitus* is an internalisation of the 'conditions of existence' – which is what *doxa* is – then the key aspects of internalised behaviour discussed so far in this chapter can all be said to be a case of *habitus*. This would include the internalisation of algorithmic biases in search behaviours, the internalisation of new behaviours caused by pressures of utility affordance, and the whole related concept of *technological somnambulism*. Furthermore, if *habitus* can evolve and change over time as these conditions change, then the *habitus* of the actors that operate in both the online and offline fields is precisely the means through which *doxa* is changed.

This can be explained by considering the mechanics of how affordance of utility of the interface made experts at English Heritage use the www.imagesofengalnd.org.uk website when they knew it to be inaccurate. The pressure exerted by affordances of utility and the effect of complacency are all features of the *doxa* of the online field. Through prolonged exposure to it by using various virtual tools experts will have internalised some of these aspects, thus changing their *habitus*. Switching back suddenly to the offline field, where they had to check an aspect of a listed building, this changed *habitus* would then not completely match the *doxa* of the offline field

causing disjuncture and 'conflict' within the actors. That conflict manifested as an odd and un-expert like behaviour in the perception of other experts whose *habitus* has not been changed by exposure to the online field. Over time, if enough actors experience such disjuncture and if they outnumber the experts in the offline field who do not, then the pressure would cause the *doxa* of the offline field itself to change and be more like the *doxa* of the online field. This is evidenced in English Heritage eventually introducing images into the official List entries. A key characteristic of Bourdieuan philosophy is this collapse between object and subject, *doxa* is influenced by the collective experience of all the actors in the field and so can change when the majority change their *habitus*.

The argument I have built so far on Foucauldian and Bourdieuan foundations enables the concepts of *doxa* and *habitus* to explain a simultaneous evolution that is taking place in the co-constitutive online and offline fields of expert knowledge production. Specifically, it is clear from my analysis that special features of the online field's *doxa* such as utility affordances, algorithmic biases and the complacency effect captured by Winner's (2009) *technological somnambulism*, are affecting the *doxa* of the offline field. At the same time, the more familiar features of the real-world field's *doxa*, such as media exposure, political influence, but also basic human behaviour, are structuring the *doxa* of the online field.

Conclusion

This chapter introduces the new concept of *algorithmic capital* to capture the enormous effect algorithms have on the findability of expert content online and, by extension, of the role of experts as gate-keepers to knowledge. It is a role algorithms are starting to usurp. *Algorithmic capital* describes the ability of actors competing in the online field to have the content and channels they care about become more findable by algorithms. This could be Google's PageRank algorithm determining google search results or Facebook's algorithm determining what posts are shown on a user's timeline. In combination with other types of capital, *algorithmic capital* helps experts to compete against rivals in the online field. Gaining this capital is made non-

trivial because of a number of different biases affecting algorithms, from *popularity bias* to *personalisation bias*.

The most interesting result of the interviews is the extent to which interviewees from both English Heritage and the Royal Society seem untroubled by the different types of bias affecting *algorithmic capital*. This may be explained by these organisations' strong relationships with the traditional media and therefore lower dependence on online communication, and the fact that they have been relatively successful in dealing with certain more obvious types of bias, like *popularity* and *optimisation bias* in the two case studies that were mentioned during the interviews. However, it is likely, at least in part, to be an example of the kind of complacency effect over search engine bias that exercises many researchers in literature (Van Couvering, 2009; Hazan, 2013; Barocas & Selbst, 2016).

Building up a more nuanced understanding of hidden biases, I argued that their influence is widespread and more significant than the public realises. *Personalisation bias*, for example, affects not just search algorithms like Google's PageRank but also push-type algorithms used in the main social media platforms, like Facebook and Twitter, having at least partial influence on the 'fake news' controversy over the results of the 2016 US Election. I have argued that complacency towards the more hidden types of algorithmic bias is an example of the *technological somnambulism* effect (Winner, 2009). Winner's concept of *technological somnambulism* brings to light one useful aspect of what is driving the changes in the online field – specifically the internalisation effect of complacency – but does not provide a comprehensive model that captures all key aspects of the changes. Through my analysis I am able to expand the concept of *technological somnambulism* by explaining the role played by affordances of utility inherent in technology of different types, from interfaces to algorithms. All these technologies exert a pressure of utility on the users, the ability to resist which is directly linked to both the nature of the affordances and the *time capital* of the user. A further contribution to the literature around affordances was made by deploying Bourdieu's (1972) concepts of *habitus* and *doxa* to create a novel model of how aspects of the online field, such as algorithmic bias, can influence behaviour of actors in the offline field.

If *algorithmic capital* is one consequence of the *doxa* of the online field reacting to the overwhelming volumes of content being generated online daily, in the next chapter of analysis, I will consider a second consequence of the same effect: the phenomenon of the *Stream*.

Chapter 5

The strange world of the Stream

> The Stream represents the triumph of reverse-chronology, where importance—above-the-foldness—is based *exclusively on nowness*.
>
> There are great reasons for why The Stream triumphed. In a world of infinite variety, it's difficult to categorize or even find, especially before a thing has been linked. So time, newness, began to stand in for many other things. And now the Internet's media landscape is like a never-ending store, where everything is free. No matter how hard you sprint for the horizon, it keeps receding. There is always something more.
>
> (Madrigal, 2013, p. 1)

Introduction

Clay Shirky (2010) has been a leading advocate of the internet as an unparalleled peer to peer network of communication, information, production and commerce. In his view, the internet breaks the previously accepted model of the majority of the public being passive recipients and consumers. Now the majority has the means to become active communicators, collaborators and producers, investing their free time and hitherto untapped skills and resources in what he terms ‘cognitive surplus’ to create their own content and products (Shirky, 2010). One direct consequence of the release of this surplus and its investment in production of different types of user-generated content online is the huge spike in volume of information being produced, whether in number of websites, or blogs, or videos on YouTube or Vimeo, or photos on Pinterest or Instagram or Facebook. In the previous chapter, I considered one way in which the *doxa* of the online field responded to this challenge: the rising influence of algorithms. In this chapter I will analyse a second response, what

Madrigal (2013) calls *The Stream*. This phenomenon is prevalent on social media platforms like Facebook and Twitter and is connected to the speed with which the content is being refreshed and new content added. It also presents a significant challenge to offline experts not used to this rhythm of communication.

In the first part of this chapter issues with the speed of communication exchanges and the expectation of instant reply on social media, will be discussed. The speed of turnaround is fundamentally in conflict with the concern of experts to get the right evidence for the reply and take time to do so. Analysing this inherent conflict allows to add more weight and definition to the concept of *time capital*, introduced in Chapter Three, in connection with Wikipedia. It is the lack of time, but also, the lack of flexibility in how time might be used that make it harder for offline experts to compete with their challengers online.

In the second part of the chapter, scenarios when social media discussions are hijacked by determined interlocutors will be considered. In these cases, experts have to negotiate what is called a 'social media crisis' and the two expert institutions explored in this study both have set policies for dealing with such crises. One shared aspect of these is the attempt to firstly slow down the speed of exchange of information on social media, and then try and divert the communication to a different platform which is more under the experts' control, such as the institution's website. The analysis will show both similarities and key differences between the approach of the two expert institutions, which are connected to the differences in their roles within their own fields of expert knowledge production.

In the third part of this chapter, the ability for ordinary users to speak to experts directly online via social media accounts will be analysed. Doing so bypasses many barriers and separations that might exist in the offline world and creates both opportunities and threats for engagement and communication between the experts and the public. In effect, the public is invited to participate in the process of expert knowledge production in a way that is open-ended and often uncurated. This creates particular risks for offline experts engaging online. These risks can include losing some of the mystique associated with expert authority, and encouraging direct challenge and confrontation. It will be argued that such direct communication with the public is taking place despite the risks because expert institutions are under

pressure to redefine how they present their expert authority online in an age of anti-deference. It will be demonstrated that technology and online culture of the internet is having a catalytic effect on this change through the process of *democratic levelling*, first described in Chapter Three.

In the fourth and final part of this chapter, it will be shown that the tone of informality online adopted by both experts and their interlocutors could carry significant risk for the experts. The risks include getting the tone of the conversation wrong and seeming arrogant or condescending, or, alternatively, coming across as unauthoritative and inauthentic, creating strong push back in either case. These risks will be analysed by applying the concepts of 'context collapse' and 'privacy paradox', demonstrating how they are connected to ideas discussed in the Chapter Four, concerning *technological somnambulism*.

Part I: The problem of speed

Previously, I have looked at the dynamics playing out when offline expert institutions such as English Heritage and the Royal Society engage with the public indirectly, by publishing information in digital spaces controlled by independent online communities, like Wikipedia, which the public can then access, or publishing content on their own websites and using *algorithmic capital* to draw users to that content. I now go on to examine instances where the expert institutions via their representatives are trying to engage in direct communication with the public at large. This is raised in interviews most often in connection with two specific social media platforms: Facebook and Twitter.

At the time of the interviews both English Heritage and the Royal Society had official accounts on Facebook and on Twitter.[54] These platforms were used to reach slightly different audiences, with Facebook used more to reach the wider public about, for example, days out at English Heritage historic properties, or the Royal Society's Summer Exhibition. On the other hand, Twitter was used more to communicate with

[54] For English Heritage the top accounts on Facebook and Twitter are https://www.Facebook.com/englishheritage/ and https://Twitter.com/EnglishHeritage. For the Royal Society they are https://www.Facebook.com/theroyalsociety/ and https://Twitter.com/royalsociety.

professional audiences in the heritage and science sectors respectively.[55] This is in line with the *media multiplexity* effect, described by Haythornthwaite (2005), whereby actors in the online field use multiple platforms at the same times but deploy them for different purposes.

In addition to their main social media accounts, the Royal Society and English Heritage had, at the time of the interviews, further subsidiary accounts focussed on a more specific audience or task, such as, @EHArchaeology on Twitter that was focussed on communicating with archaeologists.[56] Finally, in the case of notable individuals working at the two organisations, for example, famous fellows of the Royal Society or the CEO and other directors of English Heritage, there was a significant amount of official business pertaining to their institution discussed on their personal Twitter accounts.

A number of interviewees at English Heritage and the Royal Society mentioned that users expected much faster turnaround on responses to the queries and comments on these social media channels, which created a particular issue when these organisations tried to engage the public with direct communication. This is perhaps best seen in the case of Dale Farm.[57] A travellers' caravan site was set up without the requisite permissions and was therefore threatened with closure by bailiffs in 2011. The caravan site defenders, when threatened with eviction and demolition, decided to delay proceedings by applying for a listed status for the caravan site's gate as a heritage structure. Interviewee EH3 said:

> A challenge to our authority, challenge in a slightly broader sense of people not being able to understand why we take the view that we take. I suppose one would be the listing of the gates at Dale farm where there was a ridiculous application to list it. It clearly was ridiculous and was just intended as a spoiler but we have to consider everything properly. But clearly there

[55] This split in focus between the Facebook and Twitter platforms is very clear by comparing the statistics for the two parts of the original unitary English Heritage, now that the organisation has split in two. The main social media channels that used to belong to English Heritage when it was united were also inherited by the charity English Heritage, while Historic England set up new channels on Twitter and Facebook: https://www.Facebook.com/HistoricEngland/ and https://Twitter.com/HistoricEngland. English Heritage's main Facebook channel has 318,360 page 'likes' at the time of writing [9/7/2016], but Historic England only has 11,340 likes, showing the difference in emphasis between the more general public orientated social media activity of English Heritage and professionally orientated activity of Historic England. On Twitter the pattern is reversed: English Heritage has 88.5k followers and Historic England has 178k followers. By comparison, Royal Society has 133,706 likes on Facebook and 122k followers on Twitter.

[56] This account and a number of others have been closed since the interviews took place, though other new subsidiary accounts have been opened up.

[57] See the original report in the Telegraph (Cooper, 2011) and BBC's '5 years on' recollection of key events (Cawley, 2016).

> were a whole lot of people out there who thought this was utterly ridiculous and we should just rubbish it straight away. And yet actually part of our authority comes from doing things properly. So I suppose people's incomprehension of the fact that we didn't just rubbish that straight away was quite difficult. But actually what we did was try nevertheless to deal with it very quickly so in a matter of hours, but still we couldn't just say straight away when it was all building very quickly on Twitter. Of course we went and looked at it and of course it's actually rubbish. (EH3)

The Dale Farm case raises a number of interesting issues in connection with social media. One is that comments build very quickly on platforms such as Twitter and Facebook, generating tremendous pressure to respond quickly, particularly in instances of controversy. Although the application for listing on the Dale Farm gates was pushed through to resolution ‘in a matter of hours’, that is still too slow in social media terms. It is clear from the interview that the public did not understand the expert process and why it took time, wanting a decision as instant as the medium it was transmitted on. Social media platforms determine a certain pace to the conversation because users experience a constant flow of updates on, e.g. their Facebook timeline or their Twitter timeline. If there is a delay in responding, the conversation quickly moves on and the controversy has a chance to escalate. The delay creates space for other voices, often critical voices, to comment instead and possibly take control of the conversation. Commentators such as Schonfeld (2009) and Madrigal (2013) call this aspect of the online world ‘the *Stream*,’ distinguishing it from earlier conceptualisations of the online world as the ‘web’ or as a Deleuzian (1987) ‘rhizome’:

> Information is increasingly being distributed and presented in real-time streams instead of dedicated Web pages. The shift is palpable, even if it is only in its early stages. Web companies large and small are embracing this stream. It is not just Twitter. It is Facebook and Friendfeed and AOL and Digg and Tweetdeck and Seesmic Desktop and Techmeme and Tweetmeme and Ustream and Qik and Kyte and blogs and Google Reader. The stream is winding its way throughout the Web and organizing it by newness. (Schonfeld, 2009, p.1)

Madrigal (2013) contends that the *Stream* is a direct consequence of the volume of free information already available online and how much keeps being added. He concludes that people are now unwitting co-producers of the *Stream*, through not only their consumption of content, but creation of it and their expressions of sentiment in 'likes' and similar measures that keep feeding into the flow of the *Stream*, maintaining and building its momentum (Madrigal, 2013). Although Madrigal and Schonfeld are journalists or, perhaps more accurately, popular commentators, their analysis of the problem has been influential. Knowingly or not, it taps in to a rich vein of theoretical work about speed, the most prominent proponent of which is Virilio (1997), according to whom:

> Acceleration of communication tools [cause] the shrinking of geophysical space of which we are beneficiaries but also, sometimes, the unwitting victims… not content to limit extension, they are also eradicating all duration, any extension of time in the transmission of messages, images. (Virilio, 1997, p. 9)

Virilio's main argument is that the advent of technologies of speed, from railways, to the telegraph and the telephone, has collapsed space, by making the far, near. We are 'beneficiaries' of this because of increased efficiency in travel or communication. We are the 'victims' of this because the resulting collapse of space also removes the need for a 'journey', which in turns removes the possibility of choosing to stop, choosing to change direction, take a different path (Virilio, 1997). The technologies underpinning the internet have accelerated this process, by enabling individuals to be 'present' in multiple places at the same time, communicating with and affecting changes on the other side of the world. The result, Virilio warns, is that 'the age-old tyranny of distance between beings geographically distributed in different places is gradually yielding to the tyranny of real time' (Virilio, 1997, pp. 18-19).

At the same time as collapsing distance, the latest digital technology has changed our understanding of time, from a chronological time of succession of past, present and future, to a time of the present only, an inflated present moment, which, instead of being chronological is now 'chronoscopic' (Virilio, 1997). It is defined by the single moment of exposure, by how much information can be taken in at any one moment, rather than the sequence of events. Similar to the case of collapsing distance, there

is an issue of erosion of control due to the speed of communication and the insistence on it being done in 'real-time.' The serious consequence of this is that without a set sequence, how can there be confidence that whatever is being transmitted is either true or complete or in the right context? And without time to think and verify that is taken away by speed, how can experts fulfil their role of gate-keeper? Indeed, Virilio acknowledges this issue by explicitly linking truth and speed: 'the truth of a phenomenon is always limited by the speed with which it emerges' (Virilio, 1997, p. 23).

The consequences of the *Stream* and of the inflation of the present that it produces has been explored in academic work in areas of focus as varied as journalism (Lee, 2015), mobilization of public opinion (Wang et al, 2015) and government planning for response at times of crisis (Yoo et al, 2016). However, with many scholarly studies focussing on a single platform, such as Snapchat, or Facebook, or Twitter, there is a clear trap that needs to be avoided in generalising trends about the *Stream* from the particular platform under discussions to all social media platforms. Weltevrede, Helmond and Gerlitz (2014) point out that the perception of speed and 'realtimeness' is highly variable across different social media platforms, so 'real-time cannot be accounted for as a universal temporal frame… what emerges are distinct forms of 'realtimeness' which are not external from but specific to devices, organized through socio-technical arrangements and practices of use' (Weltevrede, Helmond and Gerlitz, 2014, p. 1). However, despite the differences between platforms in speed and rhythm of up-dates, the authors did find a commonality shared by all platforms: specifically that there is a clear intention for the interactions to be *perceived* as being real-time, whatever the reality. 'Realtimeness' therefore is shared tactic between platforms to increase user engagement with the content being served on that platform, even though the specifics of it may differ (Weltervrede, Helmond and Gerlitz, 2014).

The intention for messages on social media platforms to appear to be up-dating in real-time is a key factor behind the sense that the *Stream* exerts pressure to act, to read, to share, in case you miss out. It speaks to Virilio's (1997) view that time in modern technologically-mediated communication is not perceived as a sequence but as a single moment of exposure. Because of the strong feeling that there is no past, or that the past is buried by a thousand updates that have happened since, any act

that is not immediate is devalued. The fear is that a delayed response will likewise get lost in the intended recipient's *Stream* and become part of its discarded past, outside the exposure of the moment. In fact, research (Nilan et al, 2015) suggests that people are often locked in to the role of contributing content to the *Stream* through social pressure. They feel the need to like and respond to their social circle's posts, lest their failure to do so will be perceived as implied dislike. A recent example getting attention in the media being the social pressures exerted on children by trying to maintain the *snapchat streak*.[58]

This pressure to react to the 'realtimeness' of the Stream immediately brings to light a fundamental conflict between the way in which key social media channels of Twitter and Facebook operate and the academic approach to information. As touched upon in the chapter on Wikipedia, researchers tend to want to verify their facts before making a comment, which inevitably causes a delay. If a response is given too quickly there is a risk that the information is not accurate, which, if noticed by users, feeds further critical conversation. An expert organisation is expected to get their facts right and are given little leeway in this area. Furthermore, because the visible space for comment can be limited (famously this used to be 140 characters for Twitter), it makes it difficult to communicate even simple facts with the kind of qualifications and nuance that experts invariably want to add.

The Dale Farm case study provides an example of the kind of misunderstandings and misinterpretations of what the expert is saying that can suddenly spring up when context and nuance of message is stripped out in a social media post. This comes out clearly from the recollection of the case by interviewee EH4:

> The lawyers for those camping there approached us and asked us to spot list the site, which was quite a smart thing to do because we have to say that we're looking… we would look at it, because we're obliged to look at it. But, of course, the words 'we will look at it' went into social media and people understood that as, yes, we're going to *really* investigate it… And that, you

[58] The snapchat app uses flame shaped emojis against a friend's profile to indicate whether you have snapped that friend in the last 24 hours and a number next to the flame emoji which shows how many days the streak of this daily exchange has lasted for. This is called the *snapchat streak* or *snapstreak*. Because such streaks require collaboration from both parties, failure to respond within the set time limit will break the streak for both. This functionality was only released in March 2016 and within weeks news reports started to circulate of cases of bullying and confrontation among school children over a long streak broken by a participant (ITV, 2017).

> know, went to a lot of… led to a lot of people being very displeased with us thinking that we're wasting tax payers' money etc. and not understanding the process. (EH4; interviewee's own emphasis)

The issue English Heritage faced was that once that single phrase 'we will look at it' was misinterpreted on social media and generated a spike of negative comments, and comments on comments, it quickly became impossible to explain and lodge an alternative meaning of the phrase 'we would look at it' into the debate. In effect, English Heritage had to acknowledge that an opportunity to change the message was lost on that channel – i.e. on Twitter – and they were stuck with the incorrect interpretation of the phrase. They then moved to the standard social media crisis response of closing down the conversation on Twitter and routing it through other more official channels that could be controlled, comparable to an army choosing to temporary cede ground on the field of battle, judging it was no longer defensible. EH4 wondered during the interview whether in the future, if this scenario of misinterpretation were to happen again, English Heritage might turn to an alternative medium rather than social media to provide clarification. One medium EH4 suggested was video, with a 'talking head' explaining that English Heritage was legally obliged to consider every official application to list, however apparently trivial or spurious, but that only meant following a minimum set of steps until establishing there were no grounds for listing (EH4).

As a point of comparison, the Royal Society interviewees recognised the same issues with the immediacy of communication demanded by social media. According to interviewee RS2 it poses a particular 'challenge when facts need to be checked - takes 24-48 hrs' (RS2). This is a significant concern for an organisation that prides itself on doing its research. According to RS2:

> There is a need to balance two opposite risks: fail to respond to a crisis fast enough and you lose control of the message and lose your reputation with the general public; respond too fast and increase the chance of getting a fact wrong, so you lose your reputation with your expert audiences of Royal Society fellows. (RS2)

It is clear that both English Heritage and the Royal Society see the speed and flow of communication on social media platforms as a source of challenge to their authority

as experts. It is something they cannot easily circumvent because the very nature of the *Stream* that these platforms enable appears to be the antithesis of the nature of academic expertise. Where one nature demands speed, the other demands deliberation, where one calls for messages to be impactful and concise, the other necessitates that any message is balanced and nuanced. The *Stream* can therefore be seen to be an integral part of the *doxa* of the online world that the expert needs to be able to negotiate. This means there is a requirement to have a form of capital that will describe the varied ability of rival actors to engage with this part of the *doxa*, affecting their position in the online field of knowledge-power. In the chapter on Wikipedia the term *time capital* has already been posited to capture the capacity of experts competing in the online field to respond quickly to a challenge to their authority. It is now clear that *time capital* has value in online exchanges not just due to scarcity of time, but additionally due to the socio-technologically determined context of platforms compelling a higher speed of exchange. *Time capital* in this expanded definition is the full measure of an actor's ability to cope with pressures exerted by the *Stream* in the online field of knowledge-power. This form of capital is able to transcend individual sub-fields of expert knowledge production, such as those present on Wikipedia or Twitter, and applies to the whole online field of expert knowledge production.

The idea of time as a kind of capital is of course a classic metaphor well established in every-day *discourse* about the 'value of time' and inability to 'buy time.' The difference is that in the online field it is mediated through technology, dramatically increasing its value in direct proportion to the increase in the speed and tempo of communication. The findings of the interviews conducted as part of this research make clear that managing critical public opinion online is fundamentally different from what experts have been used to with traditional media. Interviewee EH6, who was personally involved in managing such social media crises, noted that social media changed the debate by effectively giving a right of response to everyone in 'real-time'. Whereas, if a similar media crisis played out on the pages of a newspaper, the responses would (a) be filtered via the letters page, and (b) there would be a delay between each publication allowing a better response to be prepared:

> I suppose what is different is that in those days… if you did think, this [a budding media story] is pretty serious and it has to be put right, there would be such a time lag, you know the paper would come out, you might get a letter in the next day or you might not get it together, it might be the day after or if, say it was a Sunday paper then it would not appear, the letter would not appear, or a regional paper, the letter would not appear for a whole week and then usually most cases that's it. You draw a line under it and that's the big difference, that with social media the response time is much quicker and often you can't draw a line under it , you keep getting...follow up. (EH6)

Nonetheless, the challenges with speed in the online field were not invented with Facebook or Twitter, instead the challenge has grown with each generation of technology, as the rate of exchange and the ease of interactivity increased. Interviewee EH5 mentioned that social media communication is just a further step in a loosening of control that started with the introduction of email. As a legal professional, EH5 described that in the world pre-email, a senior partner in any given Law Firm would insist on personally checking and approving every letter sent out to clients. There was a series of steps, in fact, that controlled written communication:

> And the other thing about both those, both e-mail, Twitter and all that sort of stuff, is that just the way it functions, a piece of paper has the opportunity for other people to look at it before it goes and we used to have terribly, you know, formal, Victorian methods of, you know, partners checking correspondence and the like. And they were signing books and, you know, letters would get compiled and amended over the day and then eventually there'd be a signing book for the partner to sign off on. That was a, you know, a serious bit of quality control. No one thought about quality control when it came to e-mail, because everyone wanted to take the advantage of e-mail, which is instant. And clients of course demanded the advantage of e-mail… (EH5)

It is interesting that EH5 finishes by using words such as 'wanted to take advantage of' and the even stronger word 'demanded' to describe the pressure of technological change, what might be described as the drive towards convenience. The clients of the legal firm in effect forced the previous model of control to be abandoned because

the immediacy of communication on email was so much more convenient than waiting for an official letter. This is another case of the effect of utility affordances, discussed in Chapter Four in connection with *technological somnambulism*. It is a reminder that these effects of technology long predate the arrival of the Web and the current digital revolution, and are instead a transformative aspect of communication technology per se. Key to both the *Stream* and utility affordances is the availability of *time capital* in the so-called attention economy (Goldhaber, 1997; Davenport and Beck, 2001; Iskold, 2007). In all the examples considered in this part of the chapter, *time capital* is not defined by just how much free time an expert has on their hands. Tied into the expanded definition is also the idea of flexibility to choose when to deploy the time and a lack of constraints such as a need to be accurate and precise. Bauman (2007) has categorised this flexibility as a key asset for coping with what he called the 'liquidity' of modern times:

> The virtue proclaimed to serve the individual's interests best is not conformity to rules (which at any rate are few and far between, and often mutually contradictory) but flexibility: a readiness to change tactics and style at short notice, to abandon commitments and loyalties without regret – and to pursue opportunities according to their current availability, rather than following one's own established preferences. (Bauman, 2007, p. 4)

An expert in English Heritage may have as many free hours in the day as the rival holder of local authority in an online field, but no flexibility in how tasks are performed. If an English Heritage expert does not check the facts sufficiently in a Twitter post, or takes a short-cut and uses an online resource like www.imagesofengland.org.uk instead of an official dataset of listed buildings, the consequences are more serious precisely because they are the expert in the offline field and not just in the online field. That lack of flexibility to take shortcuts also needs to be captured in the definition of *time capital*. Therefore, a high level of capital means both more time available and more flexibility to deploy that time, mediated by socio-technical aspects of the online field. A low level of *time capital* means the reverse.

Connecting the argument to the analysis made in the previous chapter, it is worth noting that algorithms and the *Stream* are often present at the same time, working at

times in opposition to each other and at other times in tandem. Over time, dominant social media platforms such as Facebook and Twitter have evolved away from just posting the most recent updates at the top of each user's timeline. Instead they are using algorithms to supplement the *nowness* as the key determinant of what is seen by the user, so on both platforms the time-stamp of a post has become *one of* the inputs into the algorithm that calculates the post's position in the timeline, the other key input being a judgement of the post's *relevance* (Weltevrede, Helmond and Gerlitz, 2014). Madrigal has foreseen this move to add control back into the *Stream* by social media platforms.[59] He wrote in the Atlantic magazine in 2013 that it was the year when 'peak *Stream*' was reached, after which its influence would begin to wane:

> Everyone is (over)optimizing for the *Stream*. That makes the media Internet a very fragile place… I think people will want structure and endings again, eventually. Edges and balance are valuable. The great irony is that we got what we wanted from the *Stream*: a way to read and watch outside the editorial control of editors, old Yahoo-style cataloging, and Google bots. But when the order of the media cosmos was annihilated, freedom did not rush into the vacuum, but an emergent order with its own logic. We discovered that the *Stream* introduced its own kinds of compulsions and controls. Faster! More! Faster! More! Faster! More! And now, who can keep up? There is a melancholy to the infinite scroll… maybe let's just let the web be the web again, a network of many times, not just now. (Madrigal, 2013)

Nonetheless, even though the *Stream* now has to share its influence in the online field with algorithms, it is by no means the end of this phenomenon, merely a change in which aspects of the online field it influences. The *Stream* may be growing less important but, as Madrigal points out, the borders of the online world are forever expanding, with not only more content added within platforms, but also more new platforms arising to compete for users' attention. The *Stream* is still a productive construct to describe this constant inflation of content and platforms online. For this reason, *time capital* is increasing in importance in determining which of a range of platforms a user engages with and for how long, while algorithms determine the

[59] As far as its possible to determine this (since the exact make up of algorithms is a closely guarded secret held by the proprietors) Facebook algorithm has always balanced *nowness* with other factors in calculating the position of a post in the timeline. Twitter used to differentiate itself by a strict ordering based on time stamps until a significant change in 2016 to introduce relevance calculations into the algorithm alongside time stamps. (Newton, 2016).

ranking of content *within* a platform, these two concepts increasingly working in tandem.

In conclusion to this part of the chapter, it can be said that the speed of communication on social networks is a challenge for experts more used to controlling both the medium and the message, and taking time to verify facts before responding. The cause of this challenge is the *Stream* of ever changing and updating content. The concept of *time capital*, first posited in the analysis chapter on Wikipedia, offers a way to make sense of how well or poorly prepared a given expert is for dealing with this feature of the *doxa* of the online field.

Part II: Slowing things down

In the preceding part of this chapter I have demonstrated how the speed and heightened tempo of communication on social media platforms, characteristic of the *Stream*, pose a fundamental challenge for holders of offline expert authority. One obvious way to respond to such a challenge is to try and slow down the exchange and this is exactly what both English Heritage and the Royal Society have attempted to do. Both organisations have introduced Social Media Strategies and Crisis Management Plans to deal with a social media crisis by trying to disrupt the remorseless speed and rhythm of the *Stream*. Interviewee EH4 explained the approach codified in the English Heritage Social Media Crisis Management Plan:

> I think one of the things you have to do is, immediately there is some kind of crisis or a situation, you have to take control back of the mode of communication. So, you have to… you have to say, you know, well, let's go offline and discuss this, or, I will get one of my directors… to write to you, or our regional office can write to you. So, he has to take a step back in a way if that's the right thing to do, yes…. I think though that it's slightly counter to the spirit of Twitter… but I think people are generally… they do understand that. Generally speaking, they understand that, and, yes, if you have to arrest a Twitter conversation then you just do. Because, it's better to do that and, you know, hack someone off rather than keep going and act inappropriately. (EH4)

This approach is the equivalent of introducing a firewall to slow the spread of a fire. The intention is to stop or slow the initial influx of comments during a moment of crisis, by moving the conversation from a social media platform onto a platform or medium that can be better controlled. Usually this means a more traditional communication channel and a more one-to-one rather than many-to-many mode of broadcast, such as a telephone call, personal letter or email, a statement published on a website, or even an invitation to a meeting. Successfully transferring to these channels means communication exchange can be made to slow down, the accuracy of every statement can be checked before it is sent out, and messages can be tailored in one to one, more personal, exchanges.

A case mentioned by English Heritage interviewee, EH6, provides a clear example of putting a Social Media Crisis Management Plan into action. The background to the case was that a local mosque that was being listed by English Heritage, generated a lot of negative and often discriminatory comment on English Heritage's Facebook page. The media office in English Heritage tried to deal with it by first engaging with initially reasonable criticism to explain what the grounds for listing were, but as the comments both increased in volume and became more vituperative, the decision was made to stop responding on the Facebook page, diverting discussion into more formal off-line routes and to block those users whose language was discriminatory (EH6).

> English Heritage and Pendle Council gave a grant to a mosque in Nelson in Lancashire where there is a large Asian community and the release was, the story was picked up in the Burnley Telegraph and Lancashire Evening Telegraph and attracted a lot of negative racist comments and we got a lot of posts on our Facebook page about this. People threatening to resign their membership, people saying has English Heritage lost its marbles…The last post has been 12 hours previously because it happened late at night and we have not noticed overnight, it was picked up by customer services first thing in the morning. And it did seem to have died down, but, obviously, it was important for us to put out, to correctly some of the facts…we posted that on… the comments Stream on Facebook rather than make it a new post, so unless you were looking carefully at all the posts you would not actually notice this, but if you had been engaged in that Stream you would see it. (EH6)

There are a lot of interesting things about this case. Firstly, since the comments from members of the public started arriving at night when there was no one monitoring the English Heritage social media account, a vacuum was created that was filled by increasingly more strident and extreme voices. Secondly, the number of those contributors was actually small, though they dominated the conversation. And thirdly, the often discriminatory posts bore no relation to what English Heritage was actually at the time posting about on its Facebook channel. This is a classic pattern seen in other studies of social media crises, where a social media channel is hijacked by a small group for a purpose unrelated to what the owner of the channel intended. The recent study of social media use by CERN (Kahle, Sharon and Baram-Tsabari, 2016) has shown very clearly that often critical comments grew not from what the institutional voice (i.e. CERN) originally posted, but from users commenting on each other's comments, sometimes hijacking the conversation completely, so controversy is created in a way the institution did not intend, could not foresee and could not easily prevent from happening (Kahle, Sharon and Baram-Tsabari, 2016).

It is also interesting that English Heritage responded by knowledgeably using the features of the Facebook platform. By posting a response on the specific comment feed, rather than in a new post, English Heritage was able to correct some of the facts but at the same time not give this particular group of people any more airtime, as a new post would have been pushed out to other followers of the English Heritage page that may not have been aware of the original incident.

The Royal Society have a similar approach to managing social media crises to that of English Heritage, in terms of trying to take control of the communication and ideally slow it down. However, the Royal Society add an extra decision upfront before issuing a holding statement and redirecting conversation onto other channels over which they have more control. Namely, it is the decision on whether to issue the holding statement or to say nothing at all and let the wave of unflattering comments on their social media channel die away naturally, of its own accord. Interviewee RS2 offers the following explanation:

> I mean, depending on the tone of the message, we'd either do a holding message or if the tone is slightly more tricky, if there is something there that's going to escalate, say nothing… if there's a point where someone's making

> quite a strong criticism and it's a policy point, I've learned from working previously in publishing and sort of journalist people, that anything can have quite a slight nuance. So, in those cases it's best just to say nothing and then escalate it to the press and PR people and get responses drafted. See, sometimes [the response on social media] might be 'why don't you know?' Yes, and it might be that if I escalate it, that press and PR, [decide] we don't want to respond to that. So if I've already said 'I'll find out for you'... Everyone thinks social media should be immediate and open but I wonder, I question whether it should be and whether it's changing because, you know, it's still quite new to everyone and I think as it develops and more people go online, I think there will have to be some… I think there will be some slowing down because of sort of legal issues about whether people want this or that discussed online. That's just a personal opinion. (RS2)

RS2's rationale is that holding statements of the type 'we will get back to you' or 'we will find out the background to this' may backfire for an organisation relying on expert authority as it raises the question of why the experts don't know there and now. On the other hand, the risk of the 'say nothing and wait it out' approach, is that you cannot know upfront how long it will take for the surge of negative comment to die down and whether the pressure would just continue building until there is a forced intervention by senior managers nervous at perceived reputational damage (cf. some case studies following this same pattern in existing literature: Bryce, 2014; Ki and Nekmat, 2014). When to adopt the holding statement approach and when to adopt the 'say nothing and wait it out' approach then becomes a matter of judgement of which risk is greater. What is most interesting, however, is the implied different tolerance for how much negative comment an organisation is willing to receive before intervention of some sort, even if it is just a holding statement. In all of the English Heritage interviews about social media crises it was assumed that some sort of intervention will immediately be made, there was never a suggestion that it may be better to remain silent.

This difference in tolerance may be due to the different roles of the two organisations. English Heritage is effectively part of the regulatory structure in the

heritage sector, all be it one step removed from government as an NDPB,[60] with a legal role in the planning system and powers to censure transgressors by taking them to court. As such it can be argued that it may simply have more at stake reputationally and legally, than the Royal Society which does not have this legal and regulatory role. For example, if a particular exchange on Twitter or Facebook relates to a planning case that is later subject to court proceedings, a badly phrased social media post can undermine the legal case (EH5). This difference is explicitly acknowledged by the Royal Society interviewee RS1, who pointed out that the Society is, in the end, just an advisor, whereas English Heritage has executive powers as a decision maker. The most contentious areas for the Royal Society, including in terms of social media, are those connected to giving advice to government in particular science policy areas. That is where their role comes closest to that of English Heritage, but still 'in the end the policy advice can be taken or ignored by government' and, unlike English Heritage, the Society has no role in legal cases (RS1). Interviewee RS2 expressed a similar sentiment:

> If you've written a policy report that appears to be influencing something in a certain direction and the general public or other groups don't agree with that direction, then you will get criticism for supporting that but it's not quite as weighty as if you're actually making those decisions or regulating those decisions. (RS2)

The burden of the legal role is clear if we return to consider the Dale Farm case. It is noteworthy that the Dale Farm caravan site activists *knowingly* triggered English Heritage's formal process to consider a site for listing to achieve their own objectives. Although the application to list the caravan site gates was understood by everyone to be spurious, the legal mandate of English Heritage was to formally investigate any application before making the official recommendation to list or not to list. As such, there were a number of formal and documented steps English Heritage had to follow as part of its legal role. The interviewees EH2 and EH3 believed the caravan defenders knew this legal process full well, and exploited it to both create a delay to the eviction process and to generate more publicity. There is quite a critical

[60] English Heritage at the time of the interviews was a Non Departmental Public Body (NDPB), financed largely by the Department of Culture, Media and Sport (DCMS) and with a legal role mandated by an act of Parliament to be involved in the planning process when buildings of historical interest are under threat of development

tone that comes into the discussion of these tactics by the protesters that makes clear the frustration of the experts at being manipulated in this way. So EH3 calls the tactics ‘ridiculous’, ‘rubbish’ and a ‘spoiler’. The ability for manipulation by the protesters was there in the Dale Farm case precisely because a legal rather than just an expert process was involved.

In conclusion to this part of the chapter, expert organisations liked English Heritage and the Royal Society have developed new behaviours and policies in response to the pressure exerted by the *Stream*. There is a difference in the roles of expert organisations between those who are advisors only, and therefore whose expert authority could be said to be more passive, and those whose authority is active because they hold a statutory power or legal role.

Part III: Talking to the experts

In the first and second parts of this chapter I discussed cases where there was a direct exchange between the public and the institutions of English Heritage and the Royal Society over social media channels. In all those cases the communication was often with the ‘official’ channel on Facebook or Twitter, operated most commonly by someone in a communications team or the press team, rather than the experts themselves. In part three, I will consider examples where named individual experts, holding senior positions within their organisations, are communicating directly over social media with members of the public online. In the case of the two expert organisations this study is concerned with, the CEO of English Heritage, Dr Simon Thurley, had his personal Twitter account that he used for English Heritage as well as personal communication. There were also accounts belonging to the English Heritage legal director, that was professional only and not personal, and separate personal accounts of a number of senior archaeologists and other experts that were used for some professional as well personal communication. In the Royal Society, the President at the time of the interview, Sir Paul Nurse, did not use a Twitter account in the same way, but 10 senior fellows, including members of the Royal Society’s ruling council, did (RS1).

The fact that some senior staff are engaging directly with the public through their personal Twitter accounts in both organisations is in keeping with a trend commented on in literature in connection to other holders of authority, such as journalists (Lee, 2015), or celebrities, such as world-famous singers or movie stars (Marwick and boyd, 2011a). This is a significant contrast between the online field and the offline field outside of social media. The combination of the structure of the internet as a network and the learned behaviour of people using that network contributes to the removal of barriers between holders of authority and the public online that would normally exist in the offline world. In the off-line environment, those same members of the public who can pose a question direct to Dr Thurley on Twitter would likely not be able to get to talk to him at all. In their way would be barriers such as physical buildings and walls, plus intervening layers of people. Security guards, receptionists, PAs and more junior managers would usually be expected to filter out one-to-one meetings with the public, not exposing their CEO to them. Online there is an erosion of such barriers as I will now go on to demonstrate from the results both of my empirical research and of an analysis of prevailing literature.[61]

The majority of interviewees in both English Heritage and the Royal Society who brought up direct interaction of senior experts with the public on social media platforms (RS1, RS2, EH3, EH5, EH6) thought this development was broadly positive, though senior people's participation on social media was viewed as needing careful handling by trained communications professionals. This overall approach could be described as 'cautious optimism'. This can be seen in the contrasting assessment of the use of social media by the CEO of English Heritage and the President of the Royal Society by their respective staff. In Dr Thurley's case, his use of Twitter to engage directly with the public was sighted as a positive example of leadership (EH3, EH5) even though it caused some nervousness. A senior member of staff, interviewee EH3, would purposefully follow the CEO's Twitter feed to know what he said in public in case they needed to react and help manage any issues. On the other hand, the President of the Royal Society not being on Twitter was seen by his staff as a missed opportunity. Interviewee RS1 wondered whether the Royal Society president's thought-leadership would be enhanced if he also had a blog and

[61] On Twitter, for example, the @name function can be used to place a tweet on an individual's timeline (although it is also possible for an individual to block tweets from certain accounts). Likewise, on Facebook it is possible to publish to any timeline where the comment function has not been disabled.

was on Twitter. The same interviewee went on to say that ‘barriers online means no thought-leadership, so absence of barriers online could actually increase authority’ (RS1).

The implication from RS1 was that direct engagement by the expert leaders with the public on social media was not only positive but something that was now expected of them, to ‘enhance thought-leadership’, a point also made by English Heritage interviewees (EH3, EH5). This expectation of direct engagement parallels the analysis of Lee (2015) in her review of journalists’ adoption of social media. Lee noted that there was expectation from editors that journalists would add publication across multiple social media and other online channels to their daily routine. Lee quotes one journalist she has interviewed, in a way that encapsulates this trend:

> We are told to pretty much use whatever social media we have and if we don’t have Twitter, Facebook, or Instagram, to get it. There was a big push recently to get everybody on Twitter. You know, no reporter left behind. (interview with a journalist conducted in 2014, quoted in Lee, 2015, p. 226)

The journalists in the various mainstream media outlets Lee (2015) has studied are under pressure to have an online and, specifically, a social media presence in order to engage with the public and to build the kind of thought-leadership mentioned by RS1. Indeed, Lee notes that this trend continues even though the journalists themselves believe their engagement with the public via social media accounts is limited and most of the people they talk to are in fact other professionals in their field, i.e. other journalists (Lee, 2015). There is an interesting gap between intent – public engagement – and reality: experts engaging mostly with other experts. This is a point I will return to again in Chapter Six, as there are clear parallels with the social media experience of expert institutions, who, as I will demonstrate, are keenly aware of what rival institutions are doing on social media and how many followers they have.

Charismatic leadership and transparency

There was one starkly dissenting voice among the English Heritage and Royal Society interviewees, however, who did not see this new-found approachability by

experts and leaders in expert institutions positively. English Heritage interviewee EH4 stressed:

> The risks are that you demystify this great person, the risks are that you catch this great person off guard and that they say something that they then regret or that is not quite... that is taken the wrong way by some people. The benefits are that it makes us seem open and willing to engage. I mean I suppose one downfall could be that you think you are tweeting Simon [Thurley], but he never tweets back because, of course, I don't know, he may get hundreds of tweets, so that might make you more fed up than if you had written a letter and had not gotten a response for three weeks or something... [expectations raised] unrealistically, yes. It's a bit like the Queen, you would not want the Queen to tweet back to you if you tweeted the Queen. (EH4)

The remark about distance and demystification is fascinating and recalls the definition of a holder of expert authority being an 'Other' proposed by Sennett (1980). According to Sennett, this feeling of 'otherness' was used almost as a source of psychological power by the expert over the non-expert, generating awe and binding the non-expert to the expert in a hierarchical relationship:

> The legitimacy of personal authority arises from a perception of differences in strength. The authority conveys, the subject perceives, that there is therefore something unattainable in the character of the authority... This difference arouses both fear and respect... Hegel expressed this by saying that an authority is perceived to be legitimate when his strength makes him an Other, a person inhabiting a different realm of strength […] The further away that personage is, the more he or she will inspire fear and awe. The closer the authority comes, the less omnipotent the authority can appear... This is the demystifying of authority; differences of strength may remain, but the authority is dispossessed of Otherness - of strength which appears mysterious and unfathomable. (Sennett, 1980, pp. 154-159)

According to Sennett, this Otherness pertained to a very particular kind of authority: that of *the autonomous expert*. Such experts could wield power both directly and indirectly. One example of the latter being via engendering a feeling of shame in another less expert or less autonomous person:

> Shame has taken the place of violence as a routine form of punishment in Western societies... The shame an autonomous person can arouse in subordinates is an implicit control... all he needs to do is his job - exercise his skill or deploy his calm and indifference. His powers are fixed in his position, they are static attributes, qualities of what he is. It is not so much abrupt moments of humiliation as month after month of disregarding his employees, of not taking them seriously, which establishes his domination.[62] (Sennett, 1980, p. 95)

Experts can make non-experts feel ashamed of their relative ignorance and, conversely, awestruck by the expert's superior knowledge, and thereby gain power over them. This feeling of otherness, and superior vantage point, is leveraged by professional experts of all kinds, from accountants, to lawyers, to university professors, to gain standing within a society. This is what is behind EH4's perhaps surprising analogy with the Queen: you would not want to have the Queen reply to your tweet directly because that would demystify her, bring her onto the same level as you, whereas part of the value, the excitement and the power of the Queen is her 'otherness'. It also connects directly to Weber's (1922) view of *charismatic authority*. The holder of such authority appears superhuman and mysterious to their followers and although the initial bond of authority is built on the basis of demonstrations of skill and prowess, it is sustained by the continuing effect that long-past display of skill has on the imagination of the followers. Lose that effect of otherness and the spell of *charismatic authority* is broken, or at the very least you would be required to prove your skill again, to rekindle it. However, it may be that in the context of a network, permeated by a culture of *democratic levelling* (see Chapter Three) Sennett's view of expert authority no longer applies as it once did. This will be picked up in more detail below.

Interviewee EH4's view on the importance of distance for maintaining authority and, in particular the charismatic aspects of leadership, was not shared by any of the other interviewees. Moreover, EH4 was directly criticised for it on the grounds that it limits transparency. Another senior person in English Heritage, interviewee EH5,

[62] Which is why when an expert or other person with offline authority leaves the defences of their office and engages in a direct way online, their authority weakens because they are no longer indifferent, since they are actively seeking to start a conversation

when asked for a reaction to EH4's claim of the importance of distance to maintain authority, countered that 'leadership isn't about distance', and considered this view about the benefit of distance for authority to be 'old-fashioned' (EH5). As discussed in Chapter Three, EH5 was one of the interviewees who was most worried about the perception of 'expert arrogance'. EH5 believed that a public organisation like English Heritage has no choice but to embrace transparency, partly because of Freedom of Information (FOI) laws. Nevertheless, EH5 thought that there is a 'value of FOI to authority' as it demonstrates that the organisation is generally 'working for the right reasons' (EH5). This line of thinking is entirely in keeping with the culture of *democratic levelling* that, I argued in Chapter Three, was prevalent in online communities of practice.

The idea of the open and democratic nature of online debate also was raised in the Royal Society interviews. Interviewee RS1 said that there was a significant 'open access, open science movement' that the Royal Society needed to respond to, in terms of involving the public in the workings of science (RS1). The same interviewee gave an example where the Royal Society made the specific decision to open up the debate to the public, asking them to pose questions to a panel of experts during an online debate about Climate Change. They decided to involve the public in order to overcome perceptions of a closed conversation, even though 'those questions [suggested by the public] turned out not to be quite as useful or hitting the mark as the ones that the committee had identified' (RS1). In fact, explicitly, the openness and two-way conversation was designed as 'a way of deflecting criticism' that they expected to be generated by that event (RS1). Although there was some unhappiness expressed by the public who wanted to ask more questions than were eventually posed, the Royal Society interviewee concluded that openness served them well: 'that reinforced my view that having that open exercise was a good thing to do because actually we would have had that reaction [i.e. unhappiness about not getting more questions] times 20 or times 100 if we hadn't had that forum at all' (RS1).

The interviewees from both organisations agreed that embracing the transparency and openness culture of the web could be beneficial. However, in an important intervention, interviewee EH5 warned that 'if underneath the clothes there's nothing then transparency can harm authority, or if less than authority justifies' (EH5). This

condition clearly becomes a challenge for wielders of expert authority online as it leaves unanswered the question of *who* decides what is justified? My argument indicates that the answer is derived through the mechanisms of competition for knowledge-power, and hence for control of the *discourse*, in the online field between holders of local online authority and holders of offline authority that is projected into the online field. As discussed previously, the necessity to undergo a process of acclimatising projected offline authority often means that the offline experts lose this contest, so the 'who' becomes the holders of online authority. These can include members of online communities of practice, such as Wikipedia editors; or influential bloggers, who use *algorithmic capital* and preferential attachment (Barabasi, 1999) to capture a greater slice of public's attention; or just the collective weight of opinion of followers on social media channels that directs the flow of discussion, via the determining effects of the *Stream*.

It is worth noting, however, that there is no possible amount of transparency that will satisfy *all* challengers for authority online. As discussed in detail in Chapter Three, members of online communities of practice are prompted by the culture of *democratic levelling* to be sceptical of offline experts' attempts to define the *discourse* and feel the need to challenge.

Part IV: Context collapse

It is clear from the discussion above that the majority of interviewees thought that direct engagement by experts with members of the public on social media had an overall positive effect on the institution in question. However, most interviewees also saw at least some risk in doing this, both for the individual expert and for the institution they were representing online. Interviewee EH5, who above was amongst the most passionate defenders of transparency, when pressed to think of some challenges, admitted that they were worried about how many other representatives of the organisation might be using Twitter, without any kind of oversight and co-ordination: 'showing you are not at one on this is a danger… [leads to] fragmentation… from the viewer's point of view… what is the totality of English Heritage's online presence doing?' (EH5).

One example from the English Heritage interviews seemed to validate EH5's concerns about control of social media use within the institution. Interviewee EH3 explained that @EHarchaeology Twitter account was originally set up by a group of archaeologists, who happened to be working for English Heritage as in-house experts, but who created the channel without any authorisation or input from English Heritage central management. The archaeologists used this Twitter account to discuss matters in their field that may or may not have had a connection to English Heritage projects. On occasion, in fact, what they were saying ran directly counter to English Heritage's policy and when this was pointed out to management the account was not shut down, but the central communications team gained control of it to enforce message discipline (EH3). At issue in the @EHArchaeology example is who was allowed to speak on the institution's behalf and how that could be controlled. This episode was specifically referenced (EH3, EH5) as being a catalyst behind the creation of central social media guidelines to all staff, designed to make sure they clearly separated between comments on personal accounts and comments on accounts branded 'EH' or 'English Heritage' which were deemed to be broadcasting the official position of the institution itself.

It is clear from everything discussed in this chapter so far, that social media communication at English Heritage and the Royal Society was carried out by individuals sometimes in official capacity, sometimes not, sometimes on official institutional channels and sometimes not. And these two categories of 'official-ness' of a given communication and 'official-ness' of the channel being used did not completely map onto each other. Some 'official' communication was done on personal accounts, like that of Dr Simon Thurley, and some unofficial communication was done on an official account – or at least one that could be perceived to be official because of its institutional branding – such as @EHarchaeology. In literature on social media use this blurring of the lines between private and official (or public) is known as *context collapse* (boyd, 2002, 2008; Marwick & boyd, 2011b). It is particularly prevalent on social media platforms like Facebook, where a user would often be required to have a single account linked to their offline identity, meaning that their various networks, from family members, to friends, to professional colleagues would connect to the same account (Dennen & Burner, 2017). However, it also occurs on those social media platforms that allow multiple accounts and do not

enforce the disclosure of offline identity, such as Twitter (Davis and Jurgenson, 2014).[63]

The *context collapse* between official and private activity on social media platforms was seen by a number of interviewees as a contributing factor to a particular risk with direct communication: namely, getting the messaging wrong due to the informality of the tone of conversation used to engage with the public on social media channels (EH4, EH5). Here is what interviewee EH5 says about an official Twitter account they use on behalf of English Heritage:

> I'm quite careful that I don't say anything [on Twitter] that is anything other than relaying facts, really. If I am making a personal comment, it's of an inconsequential nature… I don't make personal comments at all on matters of importance to heritage protection… I do in the Online Guide, set out, you know, a view on the law or what have you, applied policy, but that's carefully considered, checked with colleagues, you know, and that's a thought-out English Heritage position… So, in terms of authority… we've been talking about the negative side, really, which is the threat that being… that appearing to be in a casual world of conversation, yet it is broadcast uncontrollably everywhere and recorded, as you say, even if you try and row back, you can't guarantee that everything hasn't been recorded. You know, you've got to kind of have that conversation as if you are in a massive room with lots of people listening to you, who might want to do you down. (EH5)

It is noteworthy that EH5 displays a lot of self-awareness of the tone they use and the careful balance between personal 'inconsequential' comments, and making sure no personal comments at all are made on 'matters of importance to heritage protection'. EH5 contrasts the conversation environment of Twitter with the Online Guide to Heritage Sector. The Online Guide is a permanent part of the English Heritage website[64] which was set up to publish English Heritage's legal position on

[63] The initial reaction might be that platforms like Twitter that allow their users to use pseudonyms and do not limit the number of separate such accounts a user might have would not suffer from the issue of context collapse. However, that does not take into account the amount of effort it takes to build up an online identity and then maintain it. According to Stryker (2012) users' pseudonymous online identities and avatars become hard to give up or change because of the history of activity and build-up of *social capital*, such as friends and collaborator networks, associated with them. Therefore, even if in principle the platform allows for multiple segregated identities tailored to each audience, in practice individuals may find it hard to avoid using their primary account to communicate with multiple audiences, thus still opening the door for context collapse.

[64] The heritage protection guide post demerger between English Heritage and Historic England now is part of the new Historic England website: https://www.historicengland.org.uk/advice/hpg/

planning cases. It is under full control of English Heritage in terms of speed of publication, without any public editing or commenting features. Interviewee EH5 goes on to explain in more detail the danger that Twitter poses for experts:

> Twitter is too… it needs to be a conversation, it needs to be fast, you need to able to, you know, feed the beast, feed the demand, keep the conversation going, but in order to do that, I think you have to avoid making statements… we do use Twitter to launch out there, English Heritage's authoritative view on things. You know, we have had consultations recently on changes in the law to protect listed buildings and the like. What we tend to do is craft the message, craft our position in a press release news, you know, news piece online or, you know, a document setting out our consultation response and then the Twitter is just a hanger for it… If people want to come back and comment on that, and they do, you're in some difficulty and the only thing I can do really is give them the sort of polite, yes, thank you, interesting, noted kind of response. It's difficult to engage them in a conversation because you may end up filling out details that you don't want to go into because it exposes your position further without doing that check and balance that we so carefully do before we come out with an authoritative position. (EH5)

EH5 shows clear concern about being drawn into a discussion of a legal matter on Twitter, both because of the speed of turn around, the pressure to 'feed the beast' and the added issue that the informal, conversational nature of the medium may encourage the expert to inadvertently give 'details that you don't want to go into'. The kind of misrepresentation that might occur (even if the full nuanced policy is available somewhere on the official website), could cause issues in court proceedings. The two environments of Twitter and the Online Guide require a different tone of voice and approach to detail but as EH5 admitted the 'casual world of conversation' on Twitter is a threat precisely because it is possible to drop your guard and say something that then cannot be rolled back.

The consequences of getting the tone wrong and revealing too much, or being misunderstood, or just inadvertently insulting a member of the public, can be a full blown social media crisis. An example of this is how the misunderstanding of the phrase 'we will look at it' caused a crisis on Facebook for English Heritage, as

discussed in the Dale Farm's case study in part one of this chapter. However, even without triggering that extreme reaction, there is a risk that the detail and the nuance of a complex issue is simply lost in translation. This has been mentioned by interviewee EH6, who worries about how detailed expert ideas, arguments or data get simplified and rewritten when published online (EH6). In this sense even without a crisis, the objective of trying to communicate with the public would not be met. The importance of the tone of voice adds an extra determinant to exchanges on social media platform alongside the determining function of the *Stream* that was discussed earlier. It is not just the speed of communication on social media, or the number of characters allowed per tweet that causes potential challenges for experts, but that the etiquette and culture prevalent on the Twitter platform force a particular tone to the conversation: the tone of informality and being 'inconsequential.'

During the English Heritage interviews, EH6, a senior member of the English Heritage press office, agreed with the general view that communication with the public over social media channels led to universal adoption of a less formal tone. However, despite the informality, EH6 argued that there is at the same time, ironically, a lack of personal connection. You are 'expected to reply immediately in an informal conversation tone to someone who is critical of you, who you do not know, the background to whose views you may not understand.' (EH6) This is very different to communication mediated by traditional media, where a press officer would have an existing relationship with the journalists on TV or in the press who are raising questions:

> This might come as a surprise, but I think often the most effective way of dealing with the press is to flirt with them. You know, obviously, its professional flirting… you are delivering something authoritative, you are saying this is what we think, but to get it across, to get your message across most effectively, you often adopt a friendly, flirty tone. Certainly on the telephone with the press, and possibly even in an informal email. But the thing itself you are sending, the press release itself, will be very authoritative and straight… [the objective being] to get them on your side. Actually, you know, even in traditional press it comes down to relationships and good press officers have, are the ones who have the best relationships with the media. So that, even when these people, these journalists who are asking difficult

> questions, you get through it more easily. It's a bit of give and take on either side and you know the outcome will be better than if you maintained a rather more stand-offish more formal relationship with those journalists or if you don't have a relationship with them at all. (EH6)

The personal connection described by EH6 is clearly a powerful tool of communication and influence as it can be relied on to win more time and breathing space to formulate a statement. The knowledge of who you are talking to can inform the response and you can rely on a track record of conversations with said journalist, which in effect would have built your expert authority with them that you can now use. Contrast this with what EH6 says about communicating with an online audience via social media:

> Well, it's much more difficult because you often, I think, you know, in terms of social media you are not just talking to one person, you are talking to an audience the size of which you might not know, you don't know, so it's much more difficult, you can't flirt with them, it's much more difficult, well it's not impossible, it's much more difficult to flirt with the crowd, it's much more dangerous to flirt with the crowd. And, so, you have to be informal without actually getting any feedback to tell you... you are often in the position to have to sort of broach a subject without knowing what is going to come back at you. You have no feeling, no cues, none of those personal cues you get from talking one to one with somebody. (EH6)

The words EH6 uses to describe trying to communicate with unknown interlocutors via social media, such as 'difficult' and 'dangerous', bring to life the issues and risks of *context collapse* for experts using social media. The key concern for experts is that, while the tone of such conversations is expected to be informal, the audience is unknown and unknowable, exacerbating their worry of saying the wrong thing.

As with the case of English Heritage, the Royal Society also treads a fine balance between encouraging its fellows to communicate on their social media accounts and, at the same time, worrying about similar risks that could be caused through getting the tone wrong and discussing professional matters too informally. The tension is seen in one of the interviewees, RS1, discussing the dilemma of how much control to exert over the fellows' use of social media. Interviewee RS1 starts off by arguing

against control from the centre because the Royal Society serves the interests of its fellows, all of them scientists, and there is a cultural difference about scientists and academics and other professionals: ‘individual freedom is a strong cultural presence. There's freedom to speak.’ (RS1). This means there is a pressure for openness from the fellows at the Royal Society. On the other hand, RS1 appears conflicted over how much to coach the fellows before getting them to engage on social media. At first RS1 said that it was better not to coach experts on social media because ‘then they speak with an independent voice’ (RS1); but then almost immediately RS1 changed their mind and said that the Royal Society did still do Twitter coaching for the fellows and that it was ‘important to do so’ (RS1).

There is an interesting pattern visible in both the English Heritage case and the Royal Society one: the experts interviewed are clearly aware of the risks of *context collapse* on social media. However, at the same time it could be argued that they are communicating on social media precisely in order to trigger a kind of *context collapse*: they want an expert message to reach networks broader than just those of experts. Davis and Jurgenson (2014) noticed similar patterns of behaviour with other users on social media. They define two broad types of *context collapse*. The first is what they call *context collision*, when *context collapse* is unintended. The second is the intended and strategic collapsing of context by the user themselves, which they call *context collusion*. An example of the latter might be using networks of friends and friends of friends to advertise that you are looking for a new job. So, in the case of English Heritage, EH5 mentioning new planning cases on Twitter could be argued to be a case of intentional *context collusion*, whereas English Heritage archaeologists using @EHarchaeology Twitter channel to discuss their own personal views is an example of *context collision*. Similarly, in the case of the Royal Society, the seeming contradictions in responses can be explained by a simultaneous desire to instigate *context collusion* to enable the Royal Society experts to reach a wider public and enact the kind of thought-leadership interviewee RS1 talked about, but also to avoid inadvertent *context collision* that might lead to misunderstandings and a potential social media crisis.

To understand why otherwise careful experts might get into trouble with the tone of voice when replying directly to the public we can recall the insight Susan Barnes (2006) had that people behave in social media communities paradoxically as if they

were having private conversations, forgetting that they can be read, seen, followed and engaged with by strangers. Barnes called it the *privacy paradox* and it has been referenced and developed as a concept by a number of other researchers since, in contexts of privacy (Norberg, Horne and Horne, 2007; Brandimarte, Acquisti and Loewenstein, 2012; Young & Quan-Haase, 2013; Kokolakis, 2017).[65] This behaviour includes oversharing of personal information, adopting a tone of voice which may be judged by others to be inappropriate in a public debate, 'trolling' etc. Indeed, Acquisti (2004) concluded that individuals may not always act in an economically rational way with respect to their personal privacy.

Following on from Acquisti's (2004) analysis rooted in behavioural psychology and behavioural economics approaches, Kokolakis (2017) conducted a meta-study of current research into the *privacy paradox* and pointed out that there was significant debate about whether the *privacy paradox* was in fact a paradox, that is, whether user behaviour around privacy and social media might in the end be quite rational and logical. Although multiple studies showed discrepancy between people's concerns about privacy and their behaviour in openly sharing personal information (Acquisti and Grossklags, 2005; Barnes, 2006; Norberg, Horne and Horne, 2007). Kokolakis (2017) pointed to other studies (Young and Quan-Haase, 2013), that do not find such a discrepancy. Additionally, some studies (Lee, Park and Kim, 2013) found evidence of the discrepancy and hence the *privacy paradox*, but at the same time showed that users of social networks intentionally share information in a conscious trade-off between the cost to their privacy and the gain of *social capital* through better connection with their friends and a wider social network. Kokolakis himself avoided making conclusions but pointed out a few fruitful ways to resolve the seeming contradiction in evidence. Specifically, he followed Acquisity (2004) and Acquisity and Grossklags (2005) in theorising that people on social media platforms may well *think* they are making rational trade off decisions, as highlighted by Lee, Park and Kim (2013) and others. In fact, however, their privacy decisions are likely to be constrained by '*incomplete information*, *bounded rationality* and psychological biases*'* (Kokolakis, 2017, p. 124).

[65] Barnes (2006) was the first to explicitly apply the term 'privacy paradox' in connection with social networking sites. There have been earlier studies referencing 'privacy paradox' in the context of retail, both in store membership and loyalty card schemes requiring registration (Sayre and Horne, 2000) and online shopping (Brown, 2001).

To the effect of these biases should be added the pressure of the *Stream* discussed above, since it reduces the amount of time available to make that 'rational decision' to trade off privacy for *social capital*, and may make the option of *social capital* more appealing in that moment than it would have seemed in the cold light of day. Indeed, Virilio (1997) predicted something very much like the *privacy paradox* effect when he was describing the impact of modern telecommunications technologies in terms of collapsing distance and time. This, according to him, would cause inevitable confusion and misperception in human behaviour:

> The square horizon of the screen (third horizon of visibility) will emerge as a bug in the memory of the second horizon – that deep horizon of our memory of places responsible for our orientation in the world – causing confusion of near and far, of inside and outside, disorders in common perception that will gravely affect the way we think. (Virilio, 1997, p. 26)

In the context of the interviews with English Heritage and the Royal Society, the concept of the *privacy paradox* allows a more nuanced analysis of expert behaviour on social media platforms and its potential consequences. When English Heritage interviewee EH5 describes the care they take in varying the message and tone of voice between different channels, such as Twitter and the Online Guide to Heritage Sector on the English Heritage website, they are making two questionable assumptions. One, that they are able to exert such control and, two, that having more control will lead to better outcomes, in terms of avoidance of revealing the wrong information or using an inappropriate tone of voice. On the first, the ability to exert control, Kokolakis' (2017) analysis would suggest this is not always the case due to biases operating on every individual. Indeed, we have seen that EH5, though being confident of their own ability to control the message and tone, at the same time expresses concern about other individuals at English Heritage and their ability to 'stay on message'. Such a posture of confidence in self and doubt in others doing the same thing strongly suggests it is a case of the *optimism bias* and the *affect heuristic,*[66] which Kokolakis (2017) warns about.

[66] Kokolakis (2017) defines *optimism bias* as 'the consistent tendency of individuals to believe that they are less at risk of experiencing a negative event compared to others.' *Affect heuristic* refers to the fact that 'individuals tend to underestimate risks associated with things they like and overestimate them when associated with things they dislike' (Kokolakis, 2017, p. 129).

On the second assumption, that more control would lead to better outcomes, relevant literature (Brandimarte, Acquisti and Loewenstein, 2012) shows that greater control by users over the dissemination of information can paradoxically lead to more sensitive or inappropriate information being released than intended: 'People are more willing to take risks, and judge those risks as less severe, when they feel in control' (Brandimarte, Acquisti and Loewenstein, 2012, p. 340). This insight means that although an initial assumption might be that *privacy paradox* correlates with the *context collision* situations only, it is likely to also occur during *context collusion*. This means experts at English Heritage and Royal Society purposefully instigating *context collusion* type situations – such as talking about their successes in heritage protection on Twitter or trailing a policy paper on their Facebook channel in order to reach a wider audience – may well be underestimating the risks of that activity precisely because they feel to be in control.

Finally, my analysis suggests a clear parallel between the concepts of *privacy paradox* and *technological somnambulism* (Winner, 2009), not made in existing literature to the best of my knowledge. With reference to *technological somnambulism*, I demonstrated in the previous chapter how users can behave complacently online, particularly in the context of search behaviours, because of the hidden nature of algorithmic biases and the affordances of utility influencing their behaviour. In this chapter, I highlight a similar pattern with *context collapse*, cognitive biases and the *Stream* influencing users to 'lose themselves' in the moment of posting on social media, suspending their awareness that the conversation is entirely public, thus confirming the *privacy paradox*. The quite different platforms of search engines and social media sites therefore have a number of things in common where complacent and risky user behaviour is concerned: effect of technological affordances connected to speed and utility, effect of biases, and the sense of the effect being unconscious. This shared pattern suggests that these are features of the *doxa* of the online field that may be platform-agnostic and the result of both technology and human behaviour. This is something that will be analysed in more detail in the next chapter.

Conclusion

This chapter develops some key contributions to the scholarly debate around the challenge to expert authority online. The analysis points to both technological aspects of the platforms on which the communication between experts and their challengers takes place, and cultural, social and psychological impulses of individuals engaged in conversations, as influencing the way experts are able to deploy their authority online. My analysis has also found notable continuity in the effectiveness of certain elements of the *doxa* of an online field – biases, affordances, the effect of speed and rhythm of the information flow enforced by the *Stream* – between very different platforms, such as search engines and social media platforms like Facebook and Twitter.

The analysis of empirical data from the interviews with both English Heritage and the Royal Society shows how the phenomenon of the *Stream* puts great pressure on all actors in the online field, but is particularly difficult for offline experts to respond to because they tend to have less *time capital* in the online field than other actors. This is because their offline *cultural capital* as experts is built, in part, upon carefully verifying facts, a behaviour that affords them less ability to respond to change quickly. The *Stream,* though not limited as a phenomenon to just social media platforms, nonetheless finds its most common expression on them, which is reflected in the interviews concentrating on Facebook and Twitter.

Another aspect of social media platforms raised in interviews is that experts communicating in this medium tend to drop the formal tone used on other, more traditional channels, and adopt a tone of informality. My analysis shows that this happens in part because it is an effective way of engaging with the public on topics that otherwise would be too technical and dry. This is a practice called *context collusion* by Davis and Jurgenson (2014), an intentional attempt at *context collapse*. However, *context collusion* carries significant risks of losing control of the message and thereby damaging expert authority.

The other part of the reason why offline experts adopt this tone of informality is because consciously or unconsciously the experts are reacting to a pressure to conform to the norms of the online culture around them. The evidence of the

interviews discussed in this chapter suggests that the impulses by local actors in the online field to challenge authority – what I call *democratic levelling* in Chapter Three – cannot be fully controlled for or protected against by offline experts. If experts choose to engage the public online on social media channels or other platforms that allow public comment, they expose themselves to this challenge to their offline authority.

Interview findings indicate that the challenges to authority can be minimised through carefully planning, tactics and stratagems, including proactively embracing transparency and having a social media crisis management plan ready. Doing so takes account of the impulse of *democratic levelling* online rather than ignoring it, helping the experts to acclimatise their offline capital and begin to build local forms of capital in the online field, in the process described previously on the example of Wikipedia. That notwithstanding, for some critics no level of transparency provided by holders of authority will be enough. My analysis shows significant differences in approaches to handling instances of social media crisis between English Heritage and the Royal Society, due to the legal status of the former that increases its sensitivity to challenge online.

As I will demonstrate in the next chapter, despite the prevalence of a culture of *democratic levelling* and an associated rejection of external authority by online communities, hierarchy and authority *internal* to these communities are a central feature of the online world. Such internal power structures and rules make online communities highly effective competitors. However, these structures are regularly hidden and masked, with an *illusion of informality* pervading online culture.

Chapter 6

Socio-technical authority and the rise of a new *Episteme*

> Many proponents of the public understanding of science are concerned that the various scientific establishments have been too much involved with the mesmerizing aspect of public understanding – in which the masses are awed into passivity and unquestioning support for science by the sheer brilliance of modern research – and too little involved with the active, empowering side of the project.
>
> (Gregory and Miller, 1998, p. 97)

Introduction

Online communities of practice have a lot of potential to become a bridge between offline institutional experts and the general public because they have used aspects of the *doxa* of the online field to win for themselves an immense share of traffic and, by extension, influence with the public. In order to realise this potential, offline experts need to find ways to work together with these communities. Aspects of the prevailing culture in online communities, like the impulse to *democratic levelling* and the instinct to challenge external experts, means that the old approach of 'mesmerizing' a passive audience with scientific brilliance, will no longer be effective. Instead, it is necessary to engage online communities, and the public through them, more actively, as argued by Gregory and Miller (1998) in the quotation above. That will require taking time to learn their rules and approaches, and acclimatise offline capital projected into the online field so it can be deployed effectively. However, the most important first step is for offline experts to recognise that such online communities can be effective competitors and treat them with due respect.

In the first part of the chapter, I will use one specific case of a social media crisis from the English Heritage interviews – the Undershaw House case – to demonstrate the effectiveness of online communities of practice in being able to challenge offline experts in the online field of expert knowledge production. I will use the analysis of this case to demonstrate in practical application, the effect of all the different types of capital prevalent in the online field, discussed so far in this thesis.

In the second part of the chapter, I will go on to look at sentiment metrics – such as followers, likes and retweets – prevalent on social media channels. It will be demonstrated that this aspect of the *doxa* of the online field works to affect expert authority both on a technological level, via what I call *sentiment bias* affecting algorithms, and on a social/behavioural level, via the mechanism of *social capital*. Together the analysis of these different effects of sentiment metrics will allow me to define a new kind of authority online: *socio-technical authority*. I will then use a Royal Society case study as a way of demonstrating how *socio-technical authority* is beginning to have influence in the offline field of expert knowledge production. I will bring into the discussion the growing importance of *altmetrics* to the assessment of impact of scientific research and status of expert organisations like the Royal Society and English Heritage.

In the third and final part of the chapter, I will conclude the thesis by considering a bold claim, that what we are witnessing in the online field is the nascent emergence of a new *Episteme*, one defined not by a *Will to Know* but by a *Will to Capture Attention.* I will discuss the evidence that this new *Episteme* has already started to emerge, looking at the claims of authors such as Shirky (2010) that a radical redefinition of what it means to be an expert is happening online. That this new expertise is underpinned by quantity rather than quality, and popularity and attention rather than exclusivity of access to knowledge. I will then look at the counter-evidence from scholars such as Fuchs (2010, 2017) that the older *discourse* prioritising knowledge and facts over popularity and attention, is still dominant when the online field is considered from the perspective of the owners of the digital platforms rather than their users.

Part I: The Undershaw house case

In this part of the chapter I will use an in-depth analysis of one incident raised in interviews with English Heritage to examine the different elements of the argument developed so far. The incident in question is a social media crisis English Heritage had to manage in 2010 in connection with Undershaw House, the former home of Sir Arthur Conan Doyle. Over a number of weeks in November and December of that year, a local heritage group, *The Undershaw Preservation Trust*, campaigned for English Heritage to intervene in a local council's decision on the future of a development proposal for Undershaw House. The Trust in question was keen for English Heritage to upgrade the house's listed status from then Grade II, to a more prestigious (and harder to get) Grade II* or Grade I status, in order both to protect it and also to mark its cultural importance. In pursuit of their goal, the Trust tried to apply pressure on English Heritage by posting increasingly critical messages on English Heritage's Facebook page. These messages by *The Undershaw Preservation Trust* received supporting comments from other followers of the page, adding their own criticism of English Heritage, as can be seen from excerpts of such posts in Appendix 3. Here are two typical examples of comments posted on the English Heritage Facebook timeline (see Appendix 3 for further examples):

> Although I don't live in the UK and I'm not British I think it's a disgrace not to preserve Undershaw as a part of the English Heritage. Sir Arthur Conan Doyle was a great writer and a national patriot and his remembrance should be treated with respect. (Undershaw Facebook excerpts, Appendix 3, ref A)

> I am also a suporter of Undershaw and like all the others feel that this home must be saved as it is a huge part of Englands history. I would like to see English Heritage support Undershaw and not allow it to be distroyed (sic). (Undershaw Facebook excerpts, Appendix 3, ref A)

The number of people commenting was small in proportion to the full number of followers of English Heritage Facebook page, and many of the commenters seemed to also be followers of the *The Undershaw Preservation Trust*'s own Facebook page. Nonetheless, despite their small number, they dominated the conversation on English Heritage's main Facebook page, often responding to each other's

comments. English Heritage had a social media crisis on its hands which was made worse because it happened in the run up to the Christmas period, one of the peak sales and marketing periods in the year. Because of the controversy, all the English Heritage marketing department's carefully planned Facebook messages to encourage 'great days out' were being completely swamped. The Undershaw incident follows a pattern noted in existing literature in connection with other expert organisations' use of social media (Kahle, Sharon and Baram-Tsabari, 2016), and other incidents (Dale Farm and Nelson Mosque) of social media crises discussed in Chapter Five. Specifically, that critical comments grew from users commenting on each other's comments, which had little or nothing to do with what the organisation was posting at the time (i.e. Christmas activities). In these cases, a small number of initial posts by antagonistic commenters have a disproportionate effect as they draw responses from other users of social media.

In the Undershaw case, English Heritage attempted a number of times to politely divert the conversation from its public engagement channel to a more formal and, crucially, slower and more easily controlled communication route, as per its social media crisis plan (see Chapter Five, Part II). English Heritage staff did this by first releasing an initial holding statement on its Facebook page:

> Thank you for your comments about Undershaw. We are really interested in the history of buildings, & a number of noted figures' houses are listed for these reasons. Regrettably the architecture of Undershaw is not remarkable enough to put this house in the top 10% of listed buildings in the country, but we do recognise Conan Doyle's enduring literary significance which is why Undershaw is listed. (Undershaw Facebook excerpts, Appendix 3, ref B)

This did not stem the flow of comments and posts on the Facebook page, so English Heritage experts then attempted to direct-message specific complainants outside of the public Facebook page, offering to talk to them on the phone or face-to-face (Undershaw Facebook excerpts, Appendix 3, ref F). These were ignored by the recipients who continued to post public messages (EH6). Finally, an official statement was released on the English Heritage website and linked to from a new Facebook post by English Heritage (Undershaw Facebook excerpts, Appendix 3, ref D). Interviewee EH6 describes how the matter was concluded:

> We did about three of these [carefully worded responses] so we engaged I suppose three times in the conversation answering further points and then we got to a position of feeling: no, this is enough, this person is not going to actually listen to what we are saying and we were saying email us your direct contact details and we will arrange, and we will be happy to arrange a meeting and they were not doing that, so we had given them that offer publicly, they did not come back to us on that so we just left it and umm, yes the comments did eventually die out. (EH6)

Although the crisis eventually died down, it was disruptive while it lasted, and is still remembered in the annals of English Heritage as probably its worst case of social media going wrong (EH6). One of the biggest issues was that the posts came in bursts of high activity, often out-of-hours or over the weekend, when there was no one available in English Heritage office to respond to them immediately (EH6). This recalls the discussion of 'burstiness' (Yasseri et al, 2012) of activity on Wikipedia pages in Chapter Three, and is another example of the effects of the community of local experts in the online field having greater *time capital* compared to the offline experts engaging with them.

As in the discussion of the Dale Farm case study in the previous chapter, *time capital* should not be understood as only the availability of time to act, but also that the experts at English Heritage felt constrained to take extra time to get their response right. In fact, as the messages were coming in on the English Heritage Facebook page, the English Heritage press team and their expert consultants in the planning teams were exchanging multiple drafts of an official statement to ensure the correct wording (EH6). When the statement was eventually released, it still contained a small error in claiming that the development proposed for Undershaw House comprised of splitting it into two flats. The critics on Facebook immediately pointed out that, in fact, three, not two flats were proposed. English Heritage was forced to amend and re-release their statement:

> **[Name removed]** English Heritage, may I politely just say that the house is being divided into 3 apartments, not 2 as stated in your statment [sic], by floor to ceiling concrete block walls and modernised throughout. The history, ambience and integrity of the building will be totally destroyed.

18 November 2010 at 14:37 ·

English Heritage Thank you for pointing out that it is 3 apartments, not 2 [name removed], we will amend this on our statement. We do share your and others' disappointment. If there was any way in which we could play a greater part, we would seriously consider it but the planning decision lies with the local authority. Thanks for your comment [name removed], I hope more private investors will come forward in the future too!
18 November 2010 at 17:43 ·

(Undershaw Facebook excerpts, Appendix 3, Ref E)

Since the exchange happened in full view of the public, the effect of such a correction is to undermine the notion of the exclusivity of the offline institutional experts' authority over the facts. Another, perhaps more important way that the English Heritage experts' authority was undermined in these exchanges was by the critics on Facebook questioning whether the rules adopted by the experts to reach their decisions were, in fact, in the public interest, as can be seen from the following comment:

> All anyone is asking is that you reassess the case of Undershaw (sounds like a Sherlock Holmes novel). I cannot believe that listing status should be determined solely on a building's architectural merit. The reasons for wanting to preserve this house have very little to do with its structure. (Undershaw Facebook excerpts, Appendix 3, Ref C)

The implication of this comment is that assessing the importance of Undershaw House on purely architectural grounds – as, it was claimed, English Heritage was doing – is the wrong approach. It is worth analysing this tactic, as it is an especially effective way of countering the authority of offline experts. Engaging in debate with English Heritage architects and building historians on whether Undershaw is architecturally interesting would have meant contesting with the offline institutional experts using the *discourse* set by the experts themselves, i.e. fighting in the field of knowledge-power dominated by the experts. Instead, the critic attempts to change the *discourse* from architectural value to one of interest for the public. As the

comment considered above (Ref A) and others like it make clear, the followers of the English Heritage Facebook page engaging in this debate were mostly interested in saving Undershaw because Sir Arthur Conan Doyle lived there, not because of the value of the building as a building. By changing the *discourse*, the critic in question (Ref C) tailored their argument to match the clearly expressed interests of the followers of the Facebook page, including those hundreds of thousands of followers who are just reading the exchanges rather than actively participating themselves.

Bearing in mind that the exchange is happening in the online field demarcated by the English Heritage Facebook timeline and its followers and not in the offline field dominated by English Heritage, this tactic can be best understood as a case of English Heritage experts' offline capital not translating to the online field in the way they may have expected. The holders of rival local authority such as the critic making this comment (Ref C) are out-competing the experts because their *cultural capital* as fans of the history and stories of Sir Arthur Conan Doyle, is more attuned to the field the contest is taking place in.

It is clear that English Heritage in this case underestimated its opponents, not recognising them as rival experts in their own right. Certainly, the exchanges on Facebook about the facts of the case, such as the number of apartments in the proposed development, illustrate that deep local knowledge about a particular case held by communities of practice[67] lends such actors their own kind of authority, forcing offline institutional experts onto the back foot.

Tactics of online communities

What is particularly interesting in the Undershaw incident is that by looking at what was happening not only on the English Heritage Facebook page, but also on other pages on Facebook, it is possible to see how members of the *Undershaw Preservation Trust* were able to deploy different types of capital they have accumulated in the online field against the offline institutional experts at English

[67] This is also why it is appropriate to see the *Undershaw Preservation Trust* as a community of practice, rather than just a fan club: their object of practice is the production of knowledge about Undershaw House and the struggle to preserve it. Like other communities of practice, they are able to deploy in-depth knowledge of that object of practice in any arguments with other experts.

Heritage. Expanding the analysis to posts made by the *Undershaw Preservation Trust* representatives on their own Facebook page and on other third-party pages, shows that the critical comments, though made in the usual tone of informality adopted near universally online, were centrally organised with the efficiency of a military-style campaign. What appeared to be spontaneous comments by members of the public were anything but. They were encouraged and facilitated by the *Undershaw Preservation Trust* members.

Doing a search through archived pages on Facebook brings up clear evidence of members of the *Undershaw Preservation Trust* posting on the timelines of a range of other Facebook fan pages dedicated to Sir Arthur Conan Doyle, asking the followers of those pages to make comments on the English Heritage page critical of its decision. The following post is one example of a number that are given in Appendix 3:

> **[name removed]** shared a Page to Holmes Sherlock's Timeline: Please could all Sherlock Holmes fans leave a comment to support the Save Undershaw Preservation Trust's campaign to stop the development of Arthur Conan Doyle's former home. Planning permission has already been granted to turn the house at Hindhead into flats after English Heritage refused to upgrade the house's status. We need to convince them to review the case. (Undershaw Facebook excerpts, Appendix 3, Ref G)

These posts are duly followed by a spike of negative comments on the English Heritage timeline. Next in the sequence of events, after English Heritage tried to direct-message one of the most active members of the *Undershaw Preservation Trust* to try to explain its position, the individual who received the direct message then reposted it to the whole community on the *Undershaw Preservation Trust's* own Facebook page, drawing their attention to it (Undershaw Facebook excerpts, Appendix 3, Ref I):

> **The Undershaw Preservation Trust:** English Heritage's thoughts on Sir Arthur Conan Doyle's house: 'Had it retained the sense of connection that Jane Austen's house at Chawton has, for example, it might have been a different matter. But that connection was lost long ago. It would undermine the value of listing if we changed our minds without new evidence ...but simply

> under pressure from dedicated enthusiasts.' (Undershaw Facebook excerpts, Appendix 3, Ref I)

As the full transcript of comments under this post (see Appendix 3, Ref I, to examine all the comments) shows, the words 'dedicated enthusiasts' used by English Heritage produced a lot of anger and irritation form the followers of the *Undershaw Preservation Trust's* own Facebook page. They disliked themselves to be referred as such, judging it to be dismissive of their own knowledge of Undershaw:

> Their use of 'Enthusiasts' leaves a bitter taste too. Seems to suggest something along the lines of 'well meaning enough but ignorant of any knowledge that would make them worth listening to'. Grrr! (Undershaw Facebook excerpts, Appendix 3, Ref K)

Its noteworthy that the individual who reposted the direct message from English Heritage and sparked these responses, posted messages both with an individual account and with the official *Undershaw Preservation Trust* account, showing that they had some sort of official status in that group. Furthermore, as Ref J demonstrates, this official from the *Undershaw Preservation Trust* was in close communication with the person whom the *Undershaw Preservation Trust's* own website indicates was, at the time, the chairman of that Trust. Ref J shows the chairman of the Trust asking the official to repost the English Heritage statement further on other Facebook groups (Undershaw Facebook excerpts, Appendix 3, Ref J). Finally, there is further evidence of members of the Undershaw Preservation Trust talking about putting further pressure on English Heritage by involving the mainstream press:

> Very much so, I think that meeting is in order and the press should be there also to ask questions as to why EH did not step in and help and are refusing to do so now.....why would they allow our heritage to be treated like this unless they have an interest in some way with either the council or developers..... just a thought. (Undershaw Facebook excerpts, Appendix 3, Ref H)

And, by doing a documentary about Undershaw:

> **The Undershaw Preservation Trust:** I agree [name removed], I don't know what EH is thinking. The sooner we get this TV documentary off the ground the better. We hope then to go to town on those responsible for allowing this tradegy [sic]. (Undershaw Facebook excerpts, Appendix 3, Ref L)

What the totality of these excerpts demonstrates is that when in the weeks of November and December 2010 English Heritage thought it was dealing with disorganised and semi spontaneous criticism from 'enthusiasts' (ref EH6); what they in fact faced was an organised campaign by a community of practice centred around the preservation for posterity of Arthur Conan Doyle's house. This community of practice – the *Undershaw Preservation Trust* – claimed rival authority to that of English Heritage experts, correcting them on the facts and challenging their very *discourse*. This community of practice had discernible hierarchy, with a central leader, officials and a group of active followers that could be marshalled into action. It also had a clear plan of how best to pressure English Heritage into supporting them, by encouraging involvement of other social media groups and the mainstream press.

The community of practice deployed very effectively the full set of capital they have built up in the online field of knowledge production extending across numerous Facebook groups, a blog and a website. This capital included *time capital*, allowing them to make posts out of hours and at the weekend which English Heritage experts were slower to respond to. It also included the online field's version of *social capital*, using a network of followers both of their own Facebook page but also followers of other Facebook fan groups centred on Sir Arthur Conan Doyle. They also clearly had *cultural capital* in that they had deep knowledge of the facts of Undershaw House, enough to correct the experts from English Heritage on the number of apartments the house development proposed.

Again, the crucial insight is that this *cultural capital* was tailored to their field centring on the history of the house and of Conan Doyle, whereas English Heritage experts, not realising that the engagement was not taking place on their usual field of knowledge-power were attempting to use their own *cultural capital* centred around knowledge of architectural history, which was less effective in the field the contest

was taking place in. Unsurprisingly, the English Heritage experts were being out-competed in knowledge-power in the online field.

Illusion of Informality

Throughout the exchange described above and despite the evident tactical and organisational sophistication on display, the tone of the comments from the community of practice was universally informal and irreverent. The comments displayed scepticism for the authority of English Heritage experts and, crucially, the comments masked the fact that they were following the instructions of individuals who held authority in their own group. All exchanges between followers and the individuals who can be with reasonable accuracy identified as officials within the *Undershaw Preservation Trust* are carried out in the language of a friendly request as the excerpts in Appendix 3 make clear, but the effect was of central organisation. The friendly requests were followed to the letter.

The informality, therefore, appears to be an illusion. It is a construct determined in part by technological aspects of the *doxa* of the online field discussed in the preceding chapter, such as the *Stream* and the affordances of utility. This includes the speed of communication and the truncation of messages enforced by character limits. Then the remaining part is determined by cultural norms enforced by online communities, norms that individuals adopt and conform to in order to be seen to be part of that community. O'Neil (2009) wrote about the early hacker community who have established many of the online cultural norms when they created the internet on which the web and web 2.0 would later flourish. Among these norms was the casual, 'not taking yourself too seriously' kind of language:

> If autonomy is the source of legitimacy, it follows that online authority must take pains to undermine itself, to avoid appearing heavy-handed and authoritarian. This effect is achieved by the use of auto-ironic or self-deprecating strategies. (O'Neil, 2009, p. 42)

This peer pressure to appear casual and ironic at all times, lest one is accused of being self-important or self-aggrandising, has led to enforced informality. This forms

part of a ‘netiquette’ of behaviour, transgressions of which would be aggressively punished through ‘flaming’ (O’Neil, 2009), as has been discussed in connection with the Wikipedia editor community in Chapter Three. This means, of course, that enforced informality is ultimately self-defeating; it recreates the very structures of hierarchy and domination the original online community placed themselves squarely against.

As writers such as Castells (2004), Lovink (2005) and O’Neil (2009) point out, there is surviving within online communities a persistent self-identification of themselves as practitioners of decentred equality. I would argue that the egalitarianism being practised by these communities is at least in part a myth. It creates a number of illusions, including the *illusion of informality*.

Conscious or unconscious, this *illusion of informality* is of immense value to the holders of local authority in online communities of practice when they compete with the offline experts. Since this competition takes place in full view of the wider public – in this case the hundreds of thousands of followers of the English Heritage Facebook page – this value is in appearing to be weaker than they really are. It allows holders of local authority to appear to be just like the wider public: lay individuals who are passionate about protecting a house. The offline experts, who these holders of local authority contest with, are then caught in a trap. The culture of *democratic levelling* dominating online means that appearing over-mighty, too technical or too dismissive, when debating with critics on social media triggers accusation of bullying and increases sympathy for the perceived under-dog (see Chapter Three, Part II). Pitted against this default scepticism of their motives, offline institutional experts are under pressure to pretend to be less elitist. Therefore, as seen in Chapter Five, offline experts attempt to adopt the tone of informality themselves, under pressure of needing to conform and adopt the language and culture of those they are engaging with. However, trying to adopt the tone of informality risks offline experts appearing either insincere or uncertain of their own position, or, in fact, leads them to make mistakes that undermine their authority, as they fall victim to the *privacy paradox* (see Chapter Five, Part IV).

The *illusion of informality,* therefore, is a useful weapon in the hands of the local challengers to offline institutional experts. In fact, it is an example of the *symbolic*

type of capital proposed by Bourdieu (1979, 1982) to capture those instances when any other type of capital is made more effective by not being recognised for what it is by the subjects it is aimed at. Such as when people defer to the view of a debater with an educated accent and cultured taste, not realising that both mask *economic capital*, namely the money that this individual's parents invested in the right type of schools etc, which allowed both the taste and the accent to develop (Bourdieu, 1979, 1982). The tone of informality on the web is an exemplary case of that, even though the usual cues associating formality with authority and informality with lack of it, are reversed when it is applied in the online field rather than the offline field. In the online field it is informality that is more trusted and, therefore, the more effective tactic.

In summary of this part of the chapter, the Undershaw House case has demonstrated just how effective online communities of practice can be at challenging offline institutional experts. They are able to deploy the full range of capital native to the online field. Even their informal tone of communication, though an illusion, assists them against the institutional experts for whom it presents greater problems. The analysis of the Undershaw House case therefore supports the argument of this thesis that unless the offline institutional experts take time to understand the rules of the online field they engage in and unless they take time to build new types of capital suitable for this field, they run the risk of losing such exchanges.

At this point it is worth noting that the *Undershaw Preservation Trust* won the initial 'battle' over the Undershaw House development, forcing and winning a judicial review of the original planning decision (The Guardian, 2012). However, they eventually lost the 'war', when the High Court finally ruled against them and a different development proposal for the House went ahead (BBC, 2015). This demonstrates that the online challengers to offline experts cannot always rely on the contest being only in the online field they are more familiar with. To truly challenge the authority of experts they sometimes need to find a way to project their capital into the offline field as well and successfully challenge the experts there. The *Undershaw Preservation Society* ultimately were not able to do this, but other challengers to offline institutional expertise will. In the next part of the chapter I will discuss what mechanisms they might deploy to do this.

Part II: Socio-technical authority

In this part of the chapter I will use insights from the discussion of the Undershaw case above to define a new concept of *socio-technical authority*, grounded in the availability of all the new types of capital operating in the online field discussed so far in the thesis, from *time capital*, to online version of *social capital*, to *algorithmic capital*. It is further grounded in the network effects of preferential attachment inherent in the structure of the online field. I will then broaden the analysis to show that sentiment metrics, as a key part of *socio-technical authority*, are increasingly important in the offline field of expert knowledge production. They are used for comparing the effectiveness of individual experts and expert institutions as communicators and are an increasingly influential piece of evidence in research funding decisions. I trace the dynamics of this projection of *socio-technical authority* into the offline field, and highlight that inherent in this process comes the associated possibility of bias.

The single most important aspect of the Undershaw case study that is crucial for understanding the dynamics of authority online is the role of social media followers in the knowledge-power contests online. As has been demonstrated above, the officials of the *Undershaw Preservation Trust* were able to have an impact by marshalling their own social media followers and the followers of other social media pages towards putting pressure on English Heritage online. English Heritage, on the other hand, was particularly concerned by the criticism it was getting because it did not want *its own followers* to stop supporting it under the influence of the negative public relations it was receiving online (EH6).

One key tactic expert institutions deploy to defend against attacks on social media that risk them losing support of their own social media followers, is to use surrogate voices to communicate key messages that they might expect to be controversial or at risk of triggering a negative social media response. In this role, eminent individuals who are not directly working for an expert-based institution are able to answer critics on the experts' behalf, realising the benefit of perceived neutrality these surrogate voices offer. These individuals can be experts in that field themselves, or experts from a slightly different field, or just trusted, influential celebrities. Such surrogate voices are able to deploy their own *cultural capital* of mastering the local *techne* and

the *symbolic capital* of picking the right tone of voice in a way that is authentic. Using neutral but allied experts to deliver potentially controversial messages on behalf of an organisation, instead of the organisation's own in-house experts, is an approach that seems to be used quite widely among scientific organisations. Interviewee RS3 gave an example from their experience of working in a different scientific organisation, the cancer charity Cancer Research UK (CRUK): 'CRUK don't assert own authority, but 'hang' statements on somebody outside or who is perceived to be outside… Press rebuttal quotes in CRUK are normally in the name of the clinician rather than CRUK' (RS3).

The tactic of using surrogate voices, of course, does not have to happen only online or even mainly online. It is a well-established public relations technique, according to a number of English Heritage interviewees (EH1, EH3, EH6). When these interventions by a surrogate happen online, however, a whole additional effect takes place driven by the network effects of the online field, because the online version of *social capital* of the surrogate in terms of the number of followers they have online, is also taken into effect. This advantage is realised when a surrogate is used to support the institution's position during a social media debate. Indeed, two Royal Society interviewees (RS2, RS3) said that they use surrogates with their own social media following to proactively help manage the risk of their social media channels being hijacked by critics. The approach involves using surrogates to galvanise positive reviews to counter, challenge or drown out a rival negative story on social media. Royal Society interviewee RS2 said:

> You would look at that chat [on Twitter] and you'd think what is the risk and how can we make sure there are lots of positive conversation going on? So much so that that's almost a barrier to anything negative coming in… So you know you've got enough experts online aside from yourself because if it's just… so just theoretically, if it's just Royal Society having a chat about something topical, but it's Royal Society alone and they're just inviting anyone, then anyone can come in with any opinion and take over that chat and make it quite negative. But if you're prepared for that and you make sure you've got lots of supporting organisations or people who have joined in that chat on that day, then it's not just Royal Society saying, no, we think this is, you know, you've got lots of opinions. It's like having a debate with equal size

> panels so you're managing that risk by making sure there are enough friends there to support you. (RS2)

The strategy for managing Twitter chats here relies on having a high enough number of surrogates and followers, and the followers of your surrogates, all engaging in a conversation in a way sympathetic to the Royal Society, deterring negative and critical comments. This is a clear example of online version of *social capital* in action.

The higher the number of connections, in the shape of sympathetic followers that the expert institution has, the higher the online *social capital* it can bring to bear against rival local claimants to expert authority. And it is not just followers that online *social capital* is measured in. There are a number of other key related metrics in the online field, often specific to particular social media platforms. These include: YouTube *views*, Facebook *likes* and *shares*, *ratings* on Amazon and eBay and sites that review restaurants or hotels, like TripAdvisor, all of which together can be described as 'sentiment metrics'. These metrics are immediately public and visible, unlike website traffic metrics and number of inbound links that were discussed in Chapter Four. This visibility produces an important effect in that users of all types, from the general public, to local online claimants to authority, to offline experts, all tend to acknowledge the *social capital* of sentiment scores as a valuable commodity. This is something well covered in literature and explicitly connected to the notion of *social capital* (Ellison, Steinfield, and Lampe, 2007). A number of researchers have also analysed how users modify their behaviour to chase higher sentiment scores, whether wanting to be friends with people who have high 'friend' scores on social media (DeAndrea, Van Der Heide, and Easley, 2015) or wanting to buy a product with high number of stars on eBay or Amazon (Van Der Heide, Johnson and Vang, 2013; Ott et al, 2011).

The effect of sentiment metrics is behavioural in nature but they also have a second, parallel effect, this time at the level of technology. Specifically, algorithms such as those powering Facebook, Twitter or Reddit are well known to use expressions of sentiment that users generate on those platforms to be one of the inputs that determine how visible a particular post is (Gillespie, 2011, 2015). For example, Facebook's algorithm decides how many people your post would reach organically in part according to the number of likes and shares it attracts, or Reddit algorithm

orders the placement of items in its list according to votes by its users. Therefore, following Barabasi (1999), it can be said that sentiment metrics drive inequality of access to information online, both from impact on algorithms and impact on user behaviour. In this role, sentiment metrics can be said to trigger another type of hidden algorithmic bias, that I will call *sentiment bias*. As with all the biases discussed in Chapter Four,[68] the exact effect of *sentiment bias* is not made visible by the social media platforms.

Defining *socio-technical authority*

The analysis so far shows that sentiment metrics underpin two different types of capital online at the same time: the *social capital* of sentiment metrics and the *algorithmic capital* accrued through the existence of sentiment bias. Add to this the *time capital*, *cultural capital* and *symbolic capital* that accrues through the advantages of using individual followers as surrogates, that I discussed above. Then add the further insight that each of these individual followers have *their own* followers with, by extension, further accumulated capital of all different types, and those followers have their own followers, ad infinitum. What is being brought into focus is the network effect of sentiment metrics that gives some actors – the dominant nodes in the social network with large number of followers – enormous authority in the online field.[69] I will call this phenomenon *socio-technical authority*, to capture the fact that this new type of authority is accumulated both from technologically determining aspects of the *doxa* of the online field, such as *algorithmic bias* and *algorithmic capital*, and behaviourally or socially determined aspects such as online versions of *social capital*, *cultural capital* and *symbolic capital*.

Socio-technical authority is to be understood as the principle structuring force in the online field of expert knowledge production, determining the position of each actor in the hierarchy of the online field on the basis of the sum total of all the different types of capital I have just outlined as underpinning it. To be clear, there is no type of

[68] *Popularity bias*, *Link weighting bias*, *Sentiment bias*, *Optimisation bias*, *Curatorial bias*, *Own products bias*, *Personalisation bias*, *Training bias*, *Developer bias*, *Availability bias.* For more information, see Chapter Four, Part II.
[69] An example of how such authority works in the online field is seen in regular stories of celebrities being able to marshal their social media followers in support of a cause, as the singer Stormzy did by asking supporters on Twitter to sign an e-Petition for Parliament to debate the Grenfell Tower disaster, which duly pushed the number of e-Petitions to over the required 100,000 triggering such a debate (Vonberg, 2018).

capital that can be usefully accumulated online that is not part of *socio-technical authority*. Being grounded in a network of individuals, *socio-technical authority* automatically inherits all the different types of capital of all the individuals in the field, and augments the sum of individuals' capital with the *social* and *algorithmic capital* of the network itself, over and above the individuals. It is, thereby, greater than just the sum of its parts.

The concept of *socio-technical authority* can be best explained using the example of Undershaw House. In that scenario, the *socio-technical authority* of the *Undershaw Preservation Trust*, as a group, is based on two different levels at which capital is gained, plus the network effect. The first source of capital is that community's *social capital* (how many followers and surrogates it has) plus its *algorithmic capital* (how findable its content is and how viral its social media messages get) as an entity-in-itself. The second source is the sum of the individual capital of each of its members and their followers, and the followers of the followers and so on. Finally, the network effect allows that network of followers to scale exponentially and do so fast, when a particular message, like a call to save the house where Sherlock Holmes was created, goes viral.

Indeed, the network effect provides the key difference between the *Undershaw Preservation Trust's socio-technical authority* in the online field and English Heritage's institutional authority in the offline field. Although English Heritage's institutional authority can also be said to be comprised of individual sets of capital built up by each expert working in English Heritage plus an additional capital of the institution itself (its legal powers, for example), what it does not have is the technologically determined network effect. In the case of English Heritage, we have just an accumulation of capital and, arguably, the total is just the sum of its parts. The network effect of the online field, on the other hand, allows the *Undershaw Preservation Trust* to scale exponentially in terms of the amount of capital that is brought to bear, by being able to instantly engage its followers and followers of followers and make use of their capital. This effect is part of the *doxa* of the online field and has no equivalent in the offline field of expert knowledge production, as its grounded both in technology and in social connections online.

It should be noted, however, that *socio-technical authority* can be held by local experts such as members of online communities of practice such as Wikipedia editors, or by individual bloggers, Instagrammers or YouTubers, but, crucially, also by offline experts. In the latter case, however, the principles of having to build up *socio-technical authority* separate to any existing authority in the offline world I mentioned in Chapter Three, when discussing Wikipedia, still apply. Namely, it has to be built up in the online field, not the offline field. What also applies, is the mechanism through which offline expert authority made up of offline *cultural capital* and *social capital* can project into the online field and, over time, through a process I have called acclimatisation, build up online versions of this capital. These online versions of *social capital* and *cultural capital* that offline experts have, will comprise the beginnings of their own *socio-technical authority* in the online field.

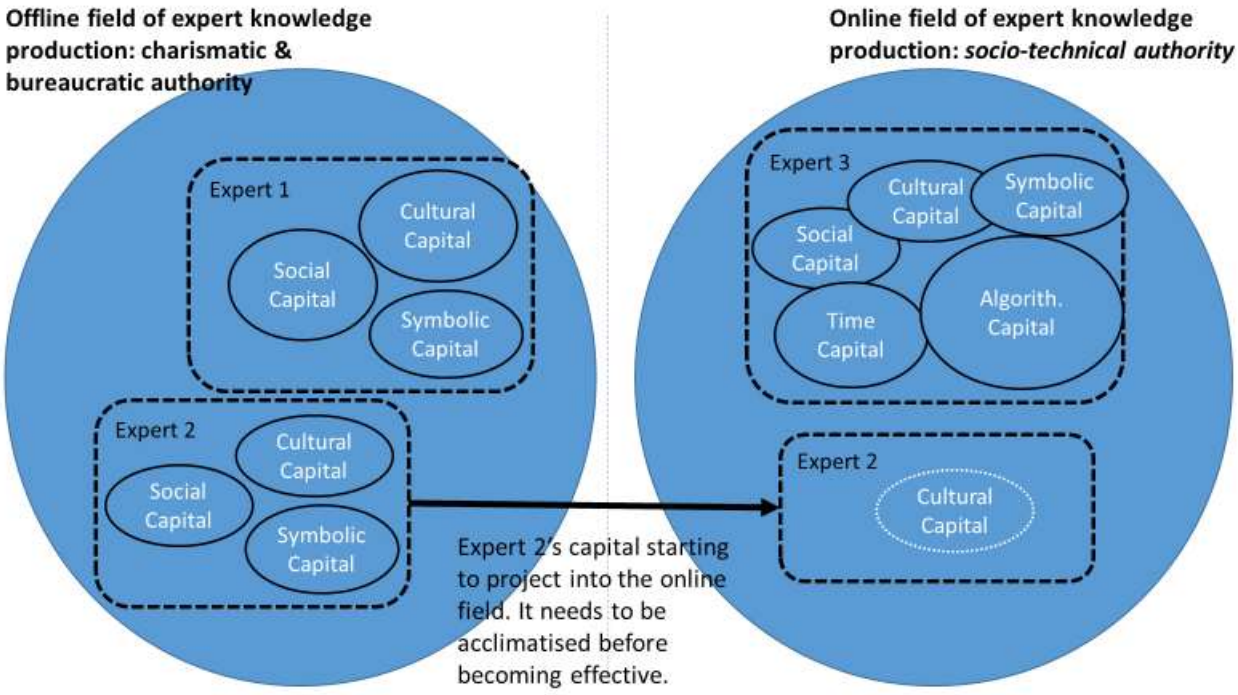

Fig. 3: Offline expert entering online field without *socio-technical authority.*

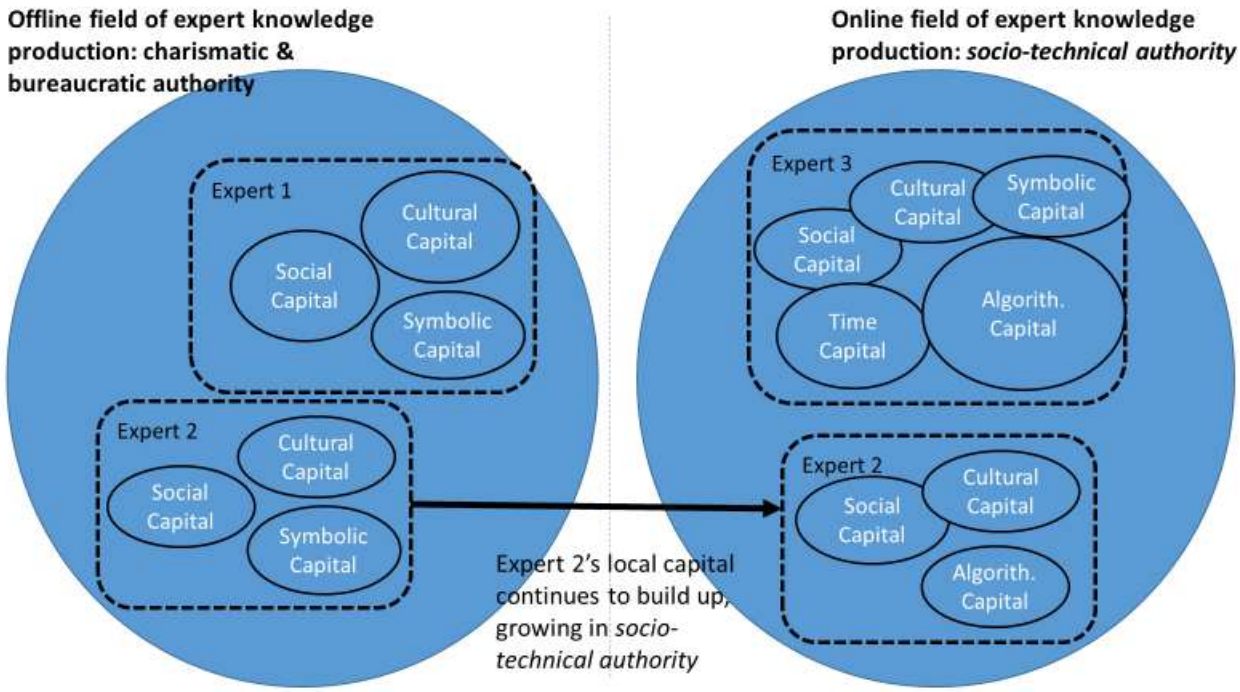

Fig. 4 Offline experts growing their own *socio-technical authority*.

An example of the interplay between offline field's types of capital and the *socio-technical authority* in the online field, would be when an offline expert institution such as English Heritage or the Royal Society create a social media account for the first time, so starting with a zero base in terms of sentiment metrics online. Being well known in the offline world, the institution will take some of the same name recognition into the online field. However, that does not mean that it will immediately gain followers, for the very simple reason that its potential followers need first to know that it is now online. The *algorithmic capital* needs to be built up for the institution to be found by those who will be interested in following it because they know the brand name from the offline world or are interested in the area of knowledge the institution champions. However, when that initial hurdle is breached and enough followers find it, the network effect takes over, they tell their friends, those tell theirs. Then the institution is likely to gather followers and 'likes' quickly because its offline *social capital* of name recognition and *cultural capital* of track-record of success in its expert domain will give it an advantage over a completely unknown new actor online. In other words, the offline *social capital* and *cultural capital* of the expert institution projects and produces an online version of *social* and

cultural capital after a period of acclimatisation, as described in Chapter Three (see Fig. 3). Putting together projected *social* and *cultural capital* with newly acquired *algorithmic capital* the institution will achieve the alchemy required to build *socio-technical authority* in the online field (see Fig. 4).

I will now demonstrate that these dynamics of capital projection between the offline and online fields of expert knowledge production increasingly allow *socio-technical authority* to exert an influence in the offline field itself.

Influencing the offline field

Both English Heritage and the Royal Society mentioned during interviews that sentiment ranking was an important measure of influence and authority for them as far as *the offline world* was concerned and not just online. Twitter, in particular, was mentioned by both organisations in this regard. English Heritage interviewee EH5 stated:

> So, you get, from that [an active account on Twitter], you get a sort of brand recognition pretty immediately I think. You also get a brand recognition, an authority recognition, from the number of followers you've got and I think from the back catalogue, if you like. (EH5)

Both English Heritage and the Royal Society actively keep track of how many followers they have, and it is seen as important for the 'brand' to have sufficiently high numbers. During the Royal Society interview in particular, the RS1 interviewee said that the number of Twitter followers has bearing on the organisation looking 'reputable and authoritative':

> The truth is, however much we like to talk about not wanting to measure the number of fans or followers, that is something that people are concerned about, that is the way you judge an organisation when you quickly want to assess them. You know, so I sort of personally feel we are in a safe zone, we've got about 70,000 Twitter followers, that's, kind of, enough for us to look like a reputable big organisation…and authoritative. But I also feel if we had

> 10,000 or 15,000 my boss would be saying, why are we not higher? But she feels more comfortable because we're in that safe zone. (RS1)

The use of the term 'safe zone' is interesting in its almost defensive, reactive connotations, which are at odds with the view 'the more followers the better' that one might have expected. Coupled with the mention of '…not wanting to measure the number of fans or followers' it leaves the impression of a slight discomfort felt by an expert based organisation at being seen to chase social media numbers, and yet, evidently, RS1 still felt there was some sort of pressure to do so.

The dichotomy of caring about the ranking but being slightly embarrassed of doing so, can be best understood as the reversal of the projected capital effect. In Chapter Three I argued that the different types of capital an expert possesses in the offline field can have an effect in the co-constitutive online field but not immediately and not to their full measure. They need first to undergo a process of acclimatisation. In the RS1 quote above, however, this process is reversed. It is clear from the interviews both with RS1 and EH5 that online *social capital,* underpinning sentiment metrics in the online field, is projecting back into the offline field. There is an influence exerted on the behaviour of experts in the offline field, evident in their concern over the metrics of key online channels and the impact on institutional authority in the *offline world*, rather than online. The conversation is about whether 'the boss' is happy with the ranking or not, rather than if a search engine positions the website or bit of content higher or not.

The reason for the 'embarrassment' then could be understood as the reversal of the delay and reduction of efficacy I identified in projection of capital from offline field to online field in Chapter Three. When the projection happens in the other direction, from the online field to the offline field, there is a similar delay and reduction of efficacy. There is, perhaps, a subconscious resistance to acknowledging the influence of a purely online measure on their authority in the offline field and an embarrassment that they are seen to care about this at all. This is understandable when the mechanism for the transfer of capital from one field into another is the *habitus*/*doxa* paired mechanism described in Chapter Four. There, the means of transfer was the *technological somnambulism* effect allowing technological features of the *doxa* of the online field like algorithmic bias and affordances of utility shape an

individual's *habitus* enough that the individual then behaves differently in the offline field.[70] The same process happens with types of capital inherent to sentiment ranking. Because the formation of *habitus* takes time, individuals begin to feel the influence of motivations inherent in the online field – such as chasing 'likes' – on their behaviour in the offline world, but are still not fully shaped by it. The sign that the *habitus* is completely developed is when the influence is no longer noticed, as per Bourdieu's (1972) ingenious insight of the inheritance of human behaviour.

My analysis of the reversal of projected capital is further confirmed when examining the process of competition between rival offline expert institutions in the offline field. When probed further on whether an organisation of a certain status like the Royal Society almost feels an expectation that it needs a certain number of followers on social media channels like Twitter, the interviewee RS1 claimed:

> You actually do, yes. I don't know how many the Royal Institution has now; we're often compared to them. I do…I do have a quick look sometimes what the other learned societies are up to or the big cultural institutions. And I think you naturally do, sort of, set a bar against the other ones, however meaningless it is. I think we do judge on that. (RS1)

It is clear then that the pressure felt by Royal Society to get in some sort of 'safe zone' in terms of minimum numbers of followers on Twitter is one of not wanting to be seen to fail when compared against other rival institutions of similar status, like the Royal Institution. This suggests that these metrics are seen as important for the organisation's brand and authority. However, the audience is not necessarily just the wider public, but also the expert peer audience of other 'big cultural institutions'.

This recalls the importance attached by academic experts to sentiment measurement as part of what is known as *altmetrics*, a broader analysis of impact of scientific and academic papers than the more traditional citation measures[71]. *Altmetrics* include measures such as Twitter mentions and are seen as having a significant and increasing bearing on expert authority (Eysenbach, 2011). However,

[70] See in depth discussion of this process in Chapter Four, Part III, focussing on the *technological somnambulism* effect.
[71] Key traditional measures of academic impact include numbers of papers published, the prestige of the journal where they were published, the prominence (was it on the cover of Nature?), and the number of times the papers were cited by other academics in their own research. These stats are produced on sites such as Scopus, WebOfKnowledge and PubMedCentral. '*Altmetrics*' were introduced in 2010 as a defined term and have since gained traction in academia. They include extra non-traditional measures of academic impact, such as the number of social media followers and mentions, citations in blogs, Wikipedia, mainstream media mentions, as well as more traditional citations (Priem et al., 2010; Altmetric, 2018).

although *altmetrics* measure public engagement of experts, the audience for the measurements are those deciding on 'the scientists' future funding, promotions, and academic visibility' (Samoilenko and Yasseri, 2014, p. 2), so namely: their peers and superiors in the academic community and funding organisations, not the public.

The evidence of both my empirical data and of literature on *altmetrics* shows that the *social* and *algorithmic capital* of sentiment ranking projected back into the offline field, is used there to determine the expert's position in the field hierarchy vis-a-vis other experts. This is the behaviour that would be expected from reading Bourdieu (1972). It shows that the type of capital that originated natively in the online field is being effective in the offline field.

Returning to earlier discussions of bias underpinning the value of *algorithmic capital* and the connection between bias and complacency (see Chapter Four, Parts II and III), it should be noted that with the evidence of *socio-technical authority* projecting from the online field to the offline fields, with it would project all the related features of the *doxa*, including sentiment bias and other types of algorithmic biases. These biases, as discussed in Chapter Four, can be 'gamed' by determined and knowledgeable actors in the online field.

To take an example from another industry, literature examining the phenomenon of 'fake reviews' confirms that it is far too easy to fake reviewer identities on sites such as TripAdvisor or Amazon despite their safeguards and, effectively, subvert the process by increasing the volume of low quality or fake reviews (Ott et al, 2011). This is widespread enough for there to be online marketplaces to advertise such services and research has shown that human actors find it difficult to tell fake reviews apart from real ones (Ott et al, 2011). This problem of bias within sentiment metrics systems is certainly transferrable to the offline field of expert knowledge production. If an expert institution's funding application, for example, is becoming at least in part determined by *altmetrics* type scores, then there may be scenarios where less deserving institutions can, in theory, gain funding over higher quality

ones, because they show evidence of their greater influence online that is inflated through bias.[72]

Funding application and other visible tests of academic authority such as the Research Excellence Framework (REF) reviews are also affected by algorithmic biases via their reliance on measuring citations of academic papers. The preferential attachment effect discussed in earlier chapters in connection with websites (see Barabasi, 1999) works just as well for citation of articles, with articles first gaining citations because they are easier to find, then continuing to get further citations because they have already been cited, their citation scores prominently displayed by academic article aggregator sites such as Scopus and Web of Science next to the title. There is a concern, in particular, for students and less experienced researchers, or those pressed for time by a publication deadline, being inadvertently manipulated into citing easier-to-find articles through such algorithmic bias effects (Regalado, 2007; Rowlands et al, 2008; Eijkman 2010).[73] In this way a small group of articles for each scientific topic may potentially end up getting the lion's share of citations, with, perhaps, more relevant work being left unread (cf. Harzing, 2013).[74] Since the number of citations for a journal article is used as an indicator of influence and impact, biases in citation can in turn undermine academic careers, negatively prejudicing funding applications and REF reviews.

A related issue is biasing of the meta-research into impacts of funding conducted by both academics and large funding agencies like the National Institutes of Health (NIH) in the USA. This approach to tracing impact of research relies on taking in ever larger datasets, including traditional, citation metrics, patents and also *altmetrics* and the data mining of qualitative unstructured data like universities' and policy

[72] Direct evidence of this happening does not exist, as far as its possible to tell, but it is worth pointing out that English Heritage and the Royal Society all report online metrics in their Annual Reports as ways of evidencing their public engagement role to Government. By highlighting these metrics, the institutions in question are inviting Government to assess them on how these numbers change.
[73] Here the *algorithmic capital* of the source paper and the *time capital* of the researcher doing their literature review are both in play, producing potential distortions in the online field.
[74] Harzig (2013) in a fascinating review of Scopus, Web of Science and Google Scholar, notes that the findability of experts' own published papers online via search engines can be inconsistent and adversely affected by factors such as paywalls, and the slowness of publishers to digitise historic archives of journals. This is in effect an example of *availability bias* discussed in Chapter Four.

organisations' websites. This data is then organised and analysed using sophisticated algorithms:

> The amount and type of data tracking the link between science and its impacts is growing, and sophisticated algorithms to sift through it are being developed. But Tijssen says the lack of theoretical underpinning for these exercises remains a problem. 'We haven't managed to bring these sources of information into an impact model that allows us to draw out conclusions from each of these separate sources. Without such a model, Tijssen says, it's difficult to know what other variables beside the research itself might be important to any eventual outcomes, and to figure out the best way to analyse the data. And with no sense of what factors are significant, gleaning whether there has been an impact becomes a complicated exercise.' (Savage, 2017, S23–S25)

The lack of 'impact model' mentioned in the quote above and the reliance on algorithms opens the door to introduction of unintended biases into the area of utmost importance of holders of offline expert authority: how their academic work is assessed by peers and funders, i.e. the metrics which directly impact their funding and therefore their hierarchical position in the offline field of expert knowledge production. Higher *socio-technical authority* in the online field held by some experts on the basis of greater *algorithmic capital* and greater online *social capital*, would then make their papers more findable and garner them more citations than they would otherwise have had. Not enough for an unknown expert to become more influential than a Nobel Prize winner, perhaps, but enough to influence the ranking order when comparing experts closer together in offline academic authority. When taken into account during funding decisions this citation ranking becomes an instance of *socio-technical authority* projecting back into the offline field from the online field, and exerting influence in a way that directly impacts experts and expert institutions.

Having shown how socio-technical authority is able to project into the offline field of expert knowledge production and have significant effect there, it is now possible to conceptualise the dynamics that happen between the two co-constitutive fields further. I can use my earlier analysis of how *socio-technical authority* of an offline

expert institution is accumulated in the online field in the first place, to posit a circulation of capital. The offline *cultural* and *social capital* that an institution like the Royal Society has underpinning its institutional authority as experts, is projected into the online field, for example, when a new social media account is created. It helps the institution to achieve a higher sentiment ranking on key social media channels than a non-world famous science organisation arguably would, after the initial period of acclimatisation (Fig. 3). Once the institution has built its *socio-technical authority* in the online field, the cycle is completed and the online capital underpinning *socio-technical authority*, including online *social capital* and *algorithmic capital* achieved by the expert institution in the online field begins to project back into the offline field and influence offline behaviours such as competition with rival experts (Fig. 5).

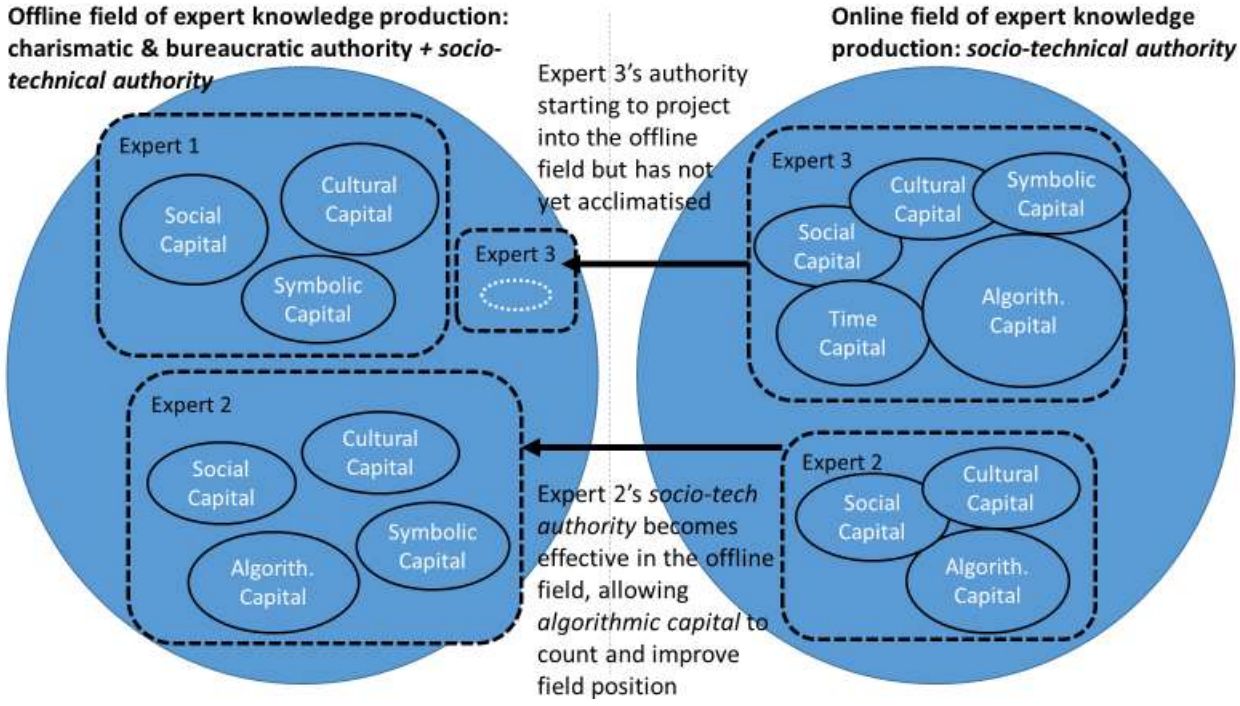

Fig. 5 Projection of *socio-technical authority* back into the offline field.

It is important to note that the starting state in that cycle, before the offline expert ventured online, and the end state are not the same. At the start, the capital the expert institution possessed was expressed in offline terms, in for example, number of papers written by its researchers, number of conferences attended, mentions in traditional media etc. The end state, when the cycle described above is completed,

the projected capital in the offline field is expressed in number of followers on Twitter or Facebook. Crucially, both types of capital are still active at the same time, so the experts would be competing with rival experts in the offline field deploying both types of capital at the same time: they would care that they had published more papers *and* that their Twitter or Facebook had more followers. Likewise, it should be noted that the competition in the online field between expert institutions is also different from the competition in the offline field, even if the mechanism of measurement appears to be the same. Using Facebook as an example, in the offline world the projected *social capital* of number of followers on Facebook would be assessed in offline terms. So, for example, the assessment that determines position vis-a-vis other rival experts could be using the metric of Facebook followers as part of REF submission to government. Whereas, judged in the online field the online *algorithmic capital* of the number of followers on Facebook would be assessed in online terms of how widely Facebook posts done by the experts reach their intended audience. This is because the organic reach of such posts would be partially determined by the number of followers, likes and shares. It is clear, therefore, that we are dealing with three very different states within the circulation of capital: offline competition, competition in the online field including with projected offline capital, and competition in the offline field with projected online capital.

With the influence of *socio-technical authority* in the offline field thus established, in the last part of this chapter I will analyse the way the rise of this new type of authority is leading to the redefinition of the key terms ‘expert’ and ‘expertise’ and a wholesale shift in the *discourse* about knowledge production, with far reaching consequences for how experts of all types relate to the public.

Part III: the rise of a new *Episteme?*

It is time to draw together the different strands of my argument. The authority of offline experts, including institutional experts like the Royal Society and English Heritage, is grounded in types of capital native in the offline field of expert knowledge production: *cultural capital* of skills, knowledge, diplomas, degrees, publications, prizes and titles, and *social capital* of connections accumulated within learned

societies and academic institutions. These experts see part of their role to be the gate-keepers of knowledge to the general public, championing, educating and policing their expert domains. As public discussion of science and knowledge increasingly occurs online, experts have no choice but to engage in the online field of expert knowledge production. Both English Heritage and the Royal Society do this extensively, and view this engagement online as a core part of their role as expert institutions. When experts engage online, however, their offline capital is not immediately effective. Instead time and effort need to be taken by the experts to acclimatise their projected capital and build new additional capital which is native to the online field. The evidence of my empirical work suggests, contra sceptics like Shirky (2010), that if they do this, then offline experts can wield their authority effectively online.

Continuing to summarise the argument so far, the activities of offline experts online do not pass without challenge from rival claimants to expertise local to the online field. These local experts might be communities of practice like Wikipedia editors, or influential bloggers, or groups of activists united by a cause, like the Anti-Fracking group from the Royal Society case study, or the *Undershaw Preservation Trust* discussed in this chapter. These local experts are sometimes underestimated by offline experts, but are often able to out-compete them because local experts are more readily able to tap into new types of capital native to the online field. These native types of capital are directly connected to the aspects of the *doxa* of the online field. Namely, *time capital* is connected to the affordances of utility and the *Stream*, whereas *algorithmic capital* is made necessary by the presence of algorithmic biases, and online *social* and *cultural capital* arise from aspects of the online culture like *democratic levelling*. Together these types of capital give local experts what I have termed *socio-technical authority*, which is the sum of all the capital pertaining to the experts and their followers and their followers' followers, etc. using network effects to gain greater influence than the sum of the individual parts.

As has been discussed in the Undershaw case, local experts are able to leverage their *socio-technical authority* so effectively that they can both challenge the prevailing *discourse* and usurp the offline experts' influence with the general public. And, through the mechanisms of *doxa* influencing *habitus* and *habitus* influencing

doxa of another field, *socio-technical authority* is able to project back into the offline field of expert knowledge production. There, *socio-technical authority* is becoming influential for offline experts themselves, through social media presence becoming a key differentiator between academic expert institutions and measures of social media influence such as *altmetrics* being taken into account in funding applications and assessment of research impact. More starkly, algorithmic bias is now recognised to be affecting the citation of academic work, still by far the most important measure of research impact. In this way my argument demonstrates the circulation of capital and the authority resting on that capital between the online and offline fields.

In this, the last part of the chapter, I start off by examining Shirky's (2010) position that what we are witnessing is the redefinition of what expertise means online, moving from defining it around quality and exclusivity of knowledge to defining it around quantity and ability to grab attention. Invoking Foucault's (1969) conceptualisation of an *Episteme*, I contend that the evidence suggests that we are witnessing a process of change from one *Episteme* to another. One of the tell-tale signs of this change is the wholesale redefinition of the terms of debate, and the wresting of control of the *discourse* from one set of experts to another.

A common criticism where the web is concerned is that quality is diluted among the huge volume of content being churned out. With the dilution of quality so is there a diminishing of the role of the individual expert author or creator of that content and the authority they have on the basis of their skill. Indeed, Jaron Lanier (2010) says that there is a process of 'decay of belief in the specialness of being human' (Lanier, 2010, p. 1) going on at the moment due to the prevalence of online tools that aggregate people's content in a very a-personal and author-neutral way. He says that 'the role of each human shifts from being a 'special' entity to being a component of an emerging global computer' (Lanier, 2010, p. 1). O'Neil (2009) identifies the same trend using the example of Amazon amateur review service:

> [Amazon] is encouraging these amateur reviewers, who are therefore increasingly challenging traditional cultural arbiters. For reviewers, accreditation is tied to participation: performance within the system matters, rather than external factors such as diplomas… It is the quantity of contributions, not their quality, which matters. (O'Neil, 2009, p. 50)

Bauman has written about this as being a great challenge to experts in the post-modern world:

> Having subordinated validation of culture to the practical judgement of quantifiable demand, the market reduced the cultural elite to one of the many 'taste interest groups' vying with each other for the benevolent attention of the consumer. Ostentatiously and self-consciously minority bound, always deriving a sense of its own superior value from its inaccessibility to the ordinary people, the 'high-culture' taste was singularly ill-prepared for such a competition and was bound to fare badly. (Bauman, 1987, p. 158)

One of the reasons that experts are so 'ill prepared' for competition with large numbers of amateurs, is because digital technology has changed the rules of the exchange between expert and non-expert, as has been demonstrated in the English Heritage and Royal Society case studies throughout this thesis. Offline *social* and *cultural capital*, which experts rely on, and the institutional authority they gain through working in domain-leading organisations such as English Heritage and the Royal Society, is de-prioritised online and only becomes useful at all if time is taken to acclimatise them. Instead, importance is given to volume and popularity, underpinning features of the *doxa* of the online field such as *algorithmic capital* and sentiment metrics. In a volume and popularity driven world each individual's opinion only gains value as part of an aggregated whole and, shockingly for the offline experts, it matters little who the individuals are.

Clay Shirky (2010) has argued that the concept of quality in the online world should be redefined and with it the idea of who an expert is. He sees the sentiment metrics discussed in the preceding part of this chapter as a powerful and democratic way the online community self-polices and self-differentiates the overwhelming amount of content it produces. He argues that such popularity measures are a new way of determining quality while at the same time providing a challenge to experts who previously saw themselves as gate-keepers of quality in a particular domain. It is worth noting that, if Shirky (2010) is correct, then bias becomes inbuilt into this new definition of quality and authority, since, as has been discussed, sentiment metrics

are inherently susceptible to being manipulated by human actors and biased by algorithmic effects.

Shirky (2010) offers the example of restaurant reviews carried out online by diners gradually destroying the expert profession of the restaurant critic, to illustrate his point. He asks why is it that we should accept the expert's definition of restaurant quality rather than the kind of things that matter to the majority of ordinary diners. In so doing he captures the shift from offline authority of experts grounded in the exclusivity of their knowledge, their *cultural capital*, to *socio-technical authority*, grounded in *algorithmic capital* and the *social capital* of sentiment metrics. But, elsewhere, Shirky (2003) is clear that the process produces its own type of inequality: 'diversity plus freedom of choice creates inequality, and the greater the diversity, the more inequality' (Shirky, 2003, p. 1). Shirky was able to see that Barabasi's (1999) preferential attachment aspect of networks inevitably accelerated the competition in any online field. Although it was easier for online communities of practice and for rival claimants to expertise to arise in the online field, compared to the offline field, it was also more likely that the majority of these actors would fail. Fail in the sense not of presenting a weaker argument, but of presenting an argument that is lost in the *Stream* and never read enough to be engaged with by other actors.

It is worth noting that Shirky's (2010) concept of *cognitive surplus* and the argument that a large number of citizen producers are able to generate expert knowledge to rival that of institutional experts, does not arise in isolation. It can be seen as being part of a long standing strand of research into citizen science and 'amateur' research. Gregory & Miller (1998), for example, record a large variety of scientific disciplines and endeavours that 'amateurs' - and Gregory & Miller make clear they are using this term in its positive definition – make a significant contribution to, often challenging established experts, and, in my own terms, out-competing them in the field of expert knowledge production. These include citizen ornithologists tracking rare bird numbers and amateur archaeologists using metal-detectors to look for archaeological remains, often with spectacular results (Gregory & Miller, 1998). The creation of internet has built on these existing endeavours by providing new tools and enabling better connections between amateurs, now being able to conduct large scale collaboration projects online. These include both commons based

encyclopaedia projects like Wikipedia, but also numerous citizen-science projects, like Nasa's Clickworkers experiment mentioned by Benkler & Nissenbaum (2006):

> … the automatically-computed consensus of a large number of Clickworkers is virtually indistinguishable from the inputs of a geologist with years of experience in identifying Mars craters. (Benkler & Nissenbaum, 2006, p. 397)

The main difference in insight that Shirky (2010) brings to this existing research is his view that the features of the online field of knowledge production are empowering these citizen scientists to not only credibly claim expertise in their own right, but to challenge the offline experts for control of the *discourse* around expertise. That is to say, it is the agonistic element of the contest between the new experts and the old that Shirky has been able to capture. Again, he is not the only one to propose this. Eysenbach (2007) outlined this in connection to medical expert information in his concept of *apomediation* discussed in Chapter Three, and Hartelius (2010) made this point explicitly in connection to Wikipedia. However, Shirky (2010) has made more generalist claims than these authors, covering all types of knowledge production, rather than focussing on specific domains or platforms.

My own analysis thus far supports Shirky's (2010) conclusion that 'quality' in the online field increasingly has a different meaning and the word 'expert' is applied to different and wider groups of people, but my analysis points to further complexity. Shirky (2010) tends to see the effects of the capital represented by sentiment metrics as a purely online phenomenon raised up in opposition to offline experts. Whereas, my analysis has indicated the multi-layered, entangled relationship between the online and offline fields, with evidence that sentiment metrics of different types are deployable both in the online and the offline fields of expert knowledge production. The circulation of capital and mutual reinforcing of offline expert authority and *socio-technical authority* outlined above contrasts with Shirky's (2010) over-simple vision of new experts online displacing offline experts through the power of technology. The case studies in this thesis show that although new, rival claimants to expertise do arise online, instead of automatically displacing the offline experts, they engage in a complex relationship with them across both the online and offline fields of expert knowledge production. Offline experts, far from surrendering the field of battle, are able to accumulate online types of capital themselves and project them back into

their offline field. Where Shirky (2010) is right is that the *exclusivity* of the role of the offline expert as gate-keeper, whether of taste, knowledge or correct practice, is undermined. And, crucially, this undermining is taking place in the offline field as well as online. The consequences of this are potentially profound, as I will now go on to discuss.

The analysis above brings to mind the discussion of Foucault's (1969) concept of the *Episteme* in the literature review chapter, and, in particular, Foucault's thoughts on what presaged the change from one *Episteme* to another. One of the tell-tale signs, according to Foucault, of a change of *Episteme* would be a wholesale redefinition of key terms, concepts, and rules about the use of such concepts, that form part of general *discourse*. As has been demonstrated, 'expertise' and 'expert' are concepts that are experiencing particularly significant change both in their meaning and their use online, indicating that such a shift in the *discourse* is taking place. This, in turn, raises the possibility that a new *Episteme* is being born online. However, although the redefinition of key terms as part of a change in the *discourse* is a *necessary* sign of a change in *Episteme*, it is not a *sufficient* one. For the evidence of the shift of *Episteme* to be deemed sufficient, what is required is not just a change in the *discourse* but a change in who controls further changes to that *discourse*. It is necessary not just that who we refer to as 'experts' changes, but that these new challengers to the title have the means to wield the same level of authority as the previous occupiers of the role.

What Foucault (1975) saw as the current, reigning *Episteme*, was defined perhaps more than anything else by the State moving to centralise the means of controlling its citizens through the use of continuous discipline and information about them. Foucault believed that the knowledge you hold about people allows you to have power over them, so the *Episteme* was characterised by an exercise of mass information gathering by the State about its citizens, which helped the state to better tailor the discipline it was meting out. This is well captured by Rouse (2003):

> ...practices of surveillance, elicitation, and documentation constrain behaviour precisely by making it more thoroughly knowable or known. But these new forms of knowledge also presuppose new kinds of constraint, which make people's actions visible... It is in this sense primarily that Foucault spoke of

> ‘power/knowledge.’ A more extensive and fine-grained knowledge enables a more continuous and pervasive control of what people do, which in turn offers further possibilities for more intrusive inquiry and disclosure. (Rouse, 2003, p. 99)

This connection between knowledge and power is at the heart of Weber’s (1922) *legal-rational authority*. It is also at the heart of Bauman’s (1987) *legislator* type of expert and Bourdieu’s (1982, 1989) idea of academic experts as controlling the means through which *economic capital* is transferred into *cultural capital* and back again, in the process perpetuating their own systemic importance.[75] All such conceptions are dependent on experts having exclusivity in their role of gate-keepers of knowledge. It is the exclusivity of the role that gives experts their power and status within the framework of the old *Episteme*.

As I have demonstrated in the preceding discussion, it is this exclusivity of role as gate-keepers that is threatened and undermined online and that is what gives sufficient grounds for claiming the rise of a new *Episteme*. The current *Episteme* might be said to be characterised by a *Will to Know* and an exclusivity of access to such knowledge by actors wielding *legal-rational* and *charismatic authority*, but in the online world a new *Episteme* is being born. An *Episteme* that is instead defined by a *Will to Capture Attention*: through search algorithms, sentiment metrics and other aspects of *socio-technical authority,* that spreads the net of expertise much wider.

Under the new *Episteme*, the virtual word is now an incubator for a new *discourse* around expertise that is already starting to spill over and change the offline world as well. There are clearly now other, rival gate-keepers of the general public’s access to knowledge in the online field. Their existence and success in knowledge-power competitions with offline experts compels the redefinition of the very term ‘expert’ to take account of *socio-technical authority* in addition to the more traditional *legal-rational* and *charismatic authority* that pertains to academic experts. Importantly the claim is not a simplistic one that, as the result of the transition, bloggers and Wikipedians will displace offline academics as experts in the offline field. Rather, my

[75] According to Bourdieu, the education system controlled by academics allows economic capital (though wealth buying a good education) to be transferred to *cultural capital* (knowledge and academic qualifications) and then back into economic capital in the new generation (through the student getting a good job upon graduation), all in a way that is hidden from view (Bourdieu, 1982).

argument is that *socio-technical authority* is becoming a significant part of how the authority of an expert is constituted, whether in the online field *or* in the offline field. Thus, offline experts who have developed their *socio-technical authority* online will dominate the offline field of expert knowledge production over those offline experts who do not, precisely because they better fit the demands of a new *Episteme* based on a *Will to Capture Attention*.

Real change or illusion?

The claim of a rise of a new *Episteme* is a bold one, particularly since Foucault (1969) himself did not well define the boundaries of one *Episteme* and another. It is important, therefore, to take a step back at this point and consider the possible counter-argument.

As has been discussed, this change in *Episteme* is not just determined by technology such as the dominance of search engines like Google, but also by social structures and cultural norms of the new online communities, tied together by common practice or interest. Within this socio-technical *doxa* of the online field there is a persistent element of illusion, that things experienced one way, actually have another hidden effect. To take two examples, in Chapter Four I demonstrated how affordances of interface utility or hidden biases in search can have a somnambulistic effect on users, causing them to do what they might not otherwise intend. Earlier in this chapter I have discussed the *illusion of informality* whereby users of social media feel the need to put on an informal tone of communication, which masks social compulsion and hierarchy within online communities.

Just as the tone of informality is an illusion, so are the other aspects of self-perception by many online communities. The profit motive, for example, has also been mentioned in the interviews (EH4) as something that becomes a target for online critics.[76] O'Neil (2009) writes that many online communities of practice have an inbuilt opposition to deriving financial profit from their work:

[76] EH4 interviewee also mentions that there is a key advantage for a not for profit organisation like English Heritage in online interactions with users: arguments/criticism around competence that English Heritage has to deal with in online debate are far less than potential criticism of 'corruption' that a for-profit organisation will be subjected to (EH4).

> A more serious kind of transgressor will always be tarred with the brush of abjection: those who break the rules of ascetic disinterest in order to accrue personal gain. By doing so, they shatter the illusion of online autonomy's distance from base motives. (O'Neil, 2009, pp. 66-67)

Yet, the modern internet and all the many so-called 'free' platforms that are a prerequisite for Shirky's (2010) *cognitive surplus*, operate on mammoth advertising profits, making Brinn, Page and Zuckerberg untold millions (Fuchs, 2010, 2017). Fuchs sees *cognitive surplus* not as an expression of autonomous creativity, but as free labour exploited by capital:

> The sustenance and creation of forms of labour that are completely unpaid or have a high degree of unpaid labour time should therefore be understood as being part of this capitalist tendency to normalize over-exploitation. Unpaid digital labour is one of the newest manifestations of this tendency. (Fuchs, 2017, p. 21)

This Marxist critique essentially agrees with Shirky (2010) about the prevalence of free digital knowledge production and about the importance of it for the new economy, but draws radically less optimistic conclusions. For Fuchs, users, their free work and data, are just commodities for the big social media businesses. However, this commodification of the user is disguised behind socialisation (Fuchs, 2017). So, socialisation of content production on platforms like Facebook, that make their money from advertising, can be said to be another kind of illusion.

Similar conclusions can be reached by considering the problem of illusion in online *doxa* from the different angle of technological affordance, rather than the angle of socio-economic exploitation. A number of researchers (Gehl, 2011; Stalder, 2012; Weltevrede, Helmond and Gerlitz, 2014) contrast the experience of users of social media at the front-end interface with that of the owners of these platforms controlling the servers, databases and analytics behind the scenes. Weltevrede, Helmond and Gerlitz (2014) point out that the apparent 'real-timeness' of the *Stream* on social media platforms is in fact manipulable by those with an interest that their content stays salient for longer, for example advertisers on Facebook or Twitter:

> Features like recommended Tweets allow companies or users to alter the fast paced temporality of Twitter Streams by giving content duration, pacing it differently and making it sticky by paying money. Similarly, Facebook offers various related features that allow pacing down the stream for payment, included promoted posts, recommendations and featured pages. (Weltevrede, Helmond and Gerlitz, 2014, p. 142)
>
> Again, the objective is to slow down the disappearance of content in the fast paced Stream whilst increasing the pace of its interaction - reduction and speeding the pace of different actions are thus tied together. (Weltevrede, Helmond and Gerlitz, 2014, p. 142)

Whereas, Gehl (2011) points out that the great value of social interaction on these platforms for the platform owners themselves is in the retained archive of personal information - its perpetual value the very opposite of the real-time immediacy of the *Stream*. For Ghel 'this contradiction is the motor that drives Web 2.0' (Ghel, 2011, p. 1229).

My analysis makes it possible to see what is at the root of the contradiction: the influence of a new *Episteme* based on the *Will to Capture Attention* is being exerted on the users of online platforms where affordances connected to speed, utility, findability and the network effect are dominant. At the same the influence of the previous *Episteme*, based on the *Will to Know*, is still powerful among the owners of these same platforms and advertisers paying them. After all, Foucault saw the core defining characteristic of the current *Episteme* as being an exercise of mass information gathering by the State about its citizens. Replace the 'State' in that sentence with 'advertisers' and it becomes evident that the concern of the owners of the online platforms such as Google and Facebook is very much with information, and hence the *Will to Know*.

There is a clear separation between how terms such as 'facts', 'knowledge' or 'expertise' are perceived by these two separate groups: the users of the social networks and the businesses making profit out of them. The latter aggregate information and apply more traditional definitions of 'facts', 'knowledge' and 'expertise' to that process, still governed by the *Will to Know*. Advertisers paying for the public's free Google searches need hard, verifiable facts about the value of

traffic, impressions and user profiles to justify their expense. Such facts are produced by traditional offline experts such as statisticians and economists, rather than by online communities of practice. This suggests that the *perceived* leaders of the new *Episteme* defined by the *Will to Capture Attention,* do not fully buy into it where they themselves are concerned. After all, Zuckerberg keeps his own data private, and Clay Shirky chooses to publish his books traditionally and for a price, protecting his intellectual property, rather than giving them away.

This analysis argues against the claim that the old *Episteme* defined by a *Will to Know* has already fully surrendered its ascendency. However, the massive disruption being caused in the offline world by digital technology, the disappearance of companies, of whole industries and professions, is real and justifies taking seriously the weaker claim that at the very least we are witnessing a period of transition from one *Episteme* to another, a period where the *Will to Know* and the *Will to Capture Attention* co-exist.

Academia has not yet been disrupted as much as many of the other fields of knowledge production, but as the analysis in this thesis makes clear, the process is well under way. As has been shown, citation based models of measuring academic impact – an integral feature of the academic industry – are being disrupted already. Moving from the present into the near future, there is emerging evidence of algorithms being written to analyse academic papers for patterns that generate secondary discovery, for example in pharmaceutical research. To take one example, Jerome Pesenti, the CEO of Benevolent AI, explained in an interview with the BBC's Rory Cellan-Jones recently that:

> His firm is using AI to accelerate the process of drug discovery. The idea is that the machine now searches through the literature and the patents and comes up with a list of potential ideas for new drugs – and then the humans sift through them to decide which ones to pursue. He says this makes the whole process much speedier: 'Coming up with new ideas is tedious and serendipitous – a machine comes up with a list much faster.' (Cellan-Jones, 2017, p. 1)

Soon new scientific papers will be written and new experiments designed with limited, if any, human intervention and scientific data will be as open and shareable as music, video or images online. This will cause enormous disruption in the offline field of expert knowledge production, further promoting *socio-technical authority* due to the inevitable bias in these new algorithmic approaches. It is apparent, therefore, that a new *Episteme* based on the principle of the *Will to Capture Attention,* is an emerging reality that academic expert institutions such as English Heritage and the Royal Society need to be prepared for.

Disruption, however, does not need to be only negative for expert institutions like English Heritage or the Royal Society. As my account has demonstrated, the contest between offline experts and the new generation of experts wielding *socio-technical authority* in the online field is not a zero-sum game. Both can prosper and increasingly act in each other's home field. Online communities of practice where this *socio-technical authority* challenge often originates, such as Wikipedia and patient voice community sites, the blogosphere and communities of the likeminded inhabiting platforms such as Twitter, Facebook and Reddit, are rapidly becoming the 21st century equivalent of the 18th century coffee houses, gentlemen's clubs and debating societies of London and Paris. That is to say, online communities engaged in expert knowledge production through debate and open collaboration, have the potential to transform people's relationship to knowledge as profoundly as the 18th century citizen scholars during the Enlightenment did. Whereas Voltaire, Diderot and Dr Johnson challenged the Church and the State for the role of controllers of the *discourse* around the topics of knowledge and truth, the online communities of practice challenge academic institutions and the professions for the same role. The role of the coffee house as a place of gathering, free of control of the current holders of authority, is taken up by the online platform enabling open debate. However, as I will now explain, both are still problematic and contested spaces. The parallel between the coffee house and the online community as a public space for knowledge exchange and production, also stretches to the negatives.

The archetype of the 18th century coffee house or gentlemen's club as the venue for the intellectual birth of the Enlightenment was the inspiration for Habermas' (1962) idealised *public sphere*. It is rightly identified as not only a place of enlightened debate but, simultaneously, a space that excludes marginalised groups from the

debate (Fraser, 1992; Landes, 1988; Eley, 1992). Women, those of lower social class and those outside the metropolitan capitals of Western Europe had few parts to play in the intellectual debates of the coffee house or the gentlemen's club, their voices too often unheard (Landes, 1988; Eley, 1992). Likewise, online communities engaged in knowledge production are attracting the same critique. There is a considerable literature pointing out that behaviour in 'egalitarian' online communities is deeply gendered, with overly masculine traits forming part of the 'netiquette' discriminating against women (Herring, 1996).

As discussed above, a number of authors point out that most of the platforms the online communities of practice use are proprietary and as such open to manipulation and exploitation to serve the needs of advertisers and platform owners (Fuchs, 2017). However, even the non-proprietary open source platforms can be places of exclusion. O'Neil (2009) follows Robert Castel (2002) in arguing that an unintended consequence of an online culture grounded in autonomy and rejection of market-based capitalism, could let in by the back door a kind of pre-capitalist archaic domination by charismatic – and universally (white) male – leaders of online communities (Castel, 2002, mentioned in O'Neil, 2009). There are real issues therefore with online communities of practice being seen as spaces for a new engagement of the public with knowledge production. However, as with the 18th century coffee house archetype, just because the spaces are problematic does not mean they don't, nonetheless, embody some progress. The coffee house allowed some more private citizens to enter debate around truth and knowledge than were able to before and so bring to life a new *discourse* and a new *Episteme* wedded to knowledge rather than the might of the sword. The online communities of practice, like Wikipedia, take a further step forward, though still imperfect.

The difference between the online community and the coffee house, however, is important in understanding how far this extra step takes us. This difference is related to two things: transparency of access and scale. In the 18th century the open debate that triggered the Enlightenment was not just exclusionary to marginalised groups, it was also invisible to the vast majority of the population in non-marginalised groups as well. In contrast, the online communities of practice conduct debates around knowledge production in the open. To take just one example considered in this thesis, every single decision made by Wikipedia editors in editing content is recorded

and accessible to anyone, allowing for the possibility of any bias to be identified and challenged (O'Neil, 2009). Moving on to consider scale, the network effect built into *socio-technical authority*, gives these online communities unparalleled advantage of numbers over any offline community: the changes made to an article on Wikipedia or a new idea shared on Twitter can reach millions of people in a way no conversation in a coffee shop ever could.

The same scale and openness inherent in the very nature of *socio-technical authority*, make sure the online communities are often noisy, combative places inhabited by trolls as well as those attempting reasoned debate, making conversations sometimes difficult. Castells (2001) acknowledged this complexity:

> … volatility, insecurity, inequality, and social exclusion go hand in hand with creativity, innovation, productivity, and wealth creation in these first steps of the Internet-based world (Castells, 2001, p4)

Online communities of practice centred around expert knowledge production are, therefore, both well-springs of new ideas with the potential to change the world and the purveyors of crass trolling and uneducated, uninspired public slander, invention and fake news. They are manipulable by a range of outside forces, from owners of platforms on which the debate is hosted, to advertisers, to political opponents, to algorithms biasing debate in ways that might be unintended by *any* of the human players. However, they also challenge the age-old biases of the offline experts, which were critiqued by Bourdieu (1982, 1989) when he described how academia circulates privilege, transmitting economic capital into cultural capital and back, and by Foucault (1977) who showed how control over the rules of *discourse* is an advantage used by experts to outcompete any challengers to their power-base. In a world permeated by knowledge-power conflicts these two sides of communities of practice, the good and the bad, are not only co-existant, they are unavoidable and inseparable.

With the advent of a new age characterised by a *Will to Capture Attention* and a growing influence of *socio-technical authority* among experts both new and old, online communities of practice can be a place where an informed public can discuss, debate and challenge the expert opinion of the day, in a way that tests new ideas on the anvil of practical consequences and thereby creates bonds of trust between the

experts and the wider public. This is what Habermas (1971) called for, when he stated:

> A scientized society could constitute itself as a rational one only to the extent that science and technology are mediated with the conduct of life through the minds of its citizens. (Habermas, 1971, p. 86)

Ironically, though so often being opponents of offline experts, the new generation of local experts online may become a bridge between offline experts and the public. To do this however, offline experts need to be willing to build up their own *socio-technical authority* sufficient to engage with these communities of local experts wherever they congregate online. With this possibility in mind, it is worth remembering Habermas' (1971) challenge to scientists and other experts:

> Neither the inner scientific requirement of translation nor the external requirement of free exchange of research information would actually suffice to set in motion a discussion of the practical consequences of scientific results among a responsive public, if the responsible scientists themselves did not ultimately *take the initiative*… the discussion that has begun in the offices of scientific consultants to government agencies basically has to be transferred to the broader political forum of the general public. (Habermas, 1971, p. 51; my emphasis)

The scale and openness of the online platforms and the community spaces they support, such as Wikipedia, are the best way to engage the public with these 'practical consequences of scientific results.' Bateman and Logan (2010) published an open letter in the pages of *Nature* calling for fellow academic experts to take the initiative and do just this. Almost a decade hence, it's time for experts and expert institutions to heed that call. The continued success of institutions like English Heritage and the Royal Society in the role of gate-keepers of their expert domains of knowledge will be contingent on how well they take up this challenge to take the initiative and engage with the new generation of local experts in the online field.

Conclusion

This last chapter of analysis makes significant conceptual advances in understanding the behaviour of offline experts online, the behaviour of their challengers and the dynamics of conflict between them. Key concepts of *illusion of informality*, *socio-technical authority* and the new *Episteme* grounded in the *Will to Capture Attention* add substantially to scholarly understanding in this area of study.

The case of Undershaw House showcases all the different types of capital prevalent in the online field of expert knowledge production being used in concert, and with intent, by a group challenging expert authority. With such reserves of capital, it only takes a relatively small number of determined and knowledgeable local actors to create a significant problem for offline experts, challenging expert authority with a rival authority of their own. The effectiveness of their actions against the experts at English Heritage demonstrate vividly the way offline institutional experts can lose control of the *discourse* around what knowledge actually is. This case also demonstrated the importance of followers in co-ordinating such social media campaigns, showing how network effects quickly multiply the reach of individuals with significant networks, providing a multiplier to the different types of capital that individual is able to deploy in the online field. This effect is captured in the concept of *socio-technical authority*.

A central argument is constructed that is the culmination of the whole thesis: that *socio-technical authority* is already influential not only on the online field of expert knowledge production, but in the offline field too. Through the inclusion of metrics such as social media mentions and citations as evidence in academic funding decisions, both of which are shown in this chapter to be susceptible to influence of algorithmic biases and preferential attachment effects, *socio-technical authority* is becoming indispensable to the offline expert as well as their online challengers.

This is conceptualised as a strong indication that there is a change in the meaning of expert and expertise. One of the key defining aspects of being an expert is being able to control *discourse* over what constitutes knowledge and be the gate-keeper to knowledge for others. The evidence of my empirical data is that other actors, like online communities of practice, are now able to challenge offline experts in these areas. However, contra authors such as Shirky (2010) and Hartelius (2010), I do not

see the new authority, and new capital and *techne* associated with it, to be exclusively the preserve of online communities of practice. Offline experts, including institutional experts, can develop *socio-technical authority* as well and be able to utilise it not only online, but, crucially, also in the offline field of expert knowledge production. There, such forward-looking experts will be able to apply *socio-technical authority* to out-compete other offline experts who have not yet taken the time to develop it themselves.

This is what underpins the claim that what we are witnessing is the transition from one *Episteme*, one defined by the *Will to Know*, to another, defined by the *Will to Capture Attention*. In this period both *Epistemes* are able to exert their influence at the same time. This allows users of platforms to gain *online social capital* through the accumulation of likes and *algorithmic capital* through the findability of their content, while allowing the owners of the same platforms to accumulate *economic capital* based on the sale of the data being gathered from the users' activities.

I conclude the chapter on a hopeful note, arguing that engagement with online communities of practice by institutional experts like English Heritage and the Royal Society can have a symbiotic effect. It can increase creativity and improve the quality of information available to wider audiences about expert subjects, precisely because platforms like Wikipedia have an unmatched reach with the public where expert knowledge is concerned.

Chapter 7

Conclusion

> The speed of transformation [online] has made it difficult for scholarly research to follow the pace of change with an adequate supply of empirical studies on the whys and wherefores of the Internet-based economy and society (Castells, 2001, p3)

The aim of this study was to examine how institutional experts in world leading academic organisations like English Heritage and the Royal Society use their authority online, and analyse how and why this authority is challenged by rival claimants to expertise in online communities of practice. I did this both through insight gleaned in my role as participant observer as Head of New Media at English Heritage, and through interviews with key people in two expert organisations, English Heritage and the Royal Society. This research question was born out of a context of massive disruption taking place in the arena of expert knowledge production at the moment, which is caused by the speed of technological development. This change is behind the phenomena of the 21st century world that make experts, particularly in their role as gate-keepers of the 'correct' knowledge, feel uneasy and under assault. These include fake news, user generated content, invisible 'black box' algorithms controlling what information the public sees, and the proliferation of bloggers and online communities who present themselves as 'experts', but are outside the control and hierarchy of academe.

In this chapter I will summarise the main findings of the thesis, drawing out some key themes and contributions the study made towards the body of knowledge about expert engagement with the online world. Moreover, I will discuss my own experience as a participant observer working in English Heritage, and how the

findings of my research shed light on that experience in retrospect. I will finish with a set of recommendations emerging from the conclusions of my work.

This thesis found its starting point in the theories of Michel Foucault (1976, 1977) and Pierre Bourdieu (1972), building up an original conceptual framework that saw the experiences of institutional academic experts taking place in an overall network of knowledge-power, split into a series of fields (Chapter 2). The study focussed on the offline field of expert knowledge production and its connected online field of expert knowledge production, exploring whether expert authority was able to transfer between them. Within either field, authority was gained or lost through the mechanism of accumulation of capital. Borrowing from Bourdieu (1972) the following types of capital were identified to start with: *economic, social, cultural* and *symbolic*. Although the focus of the empirical research was on institutional experts because of their additional roles as gate-keepers of information and their involvement in public engagement, these institutional experts were just a special subset of academic experts operating in the offline field. Since a lot of the existing literature dealt mostly with individual academic experts, rather than expert institutions like English Heritage and the Royal Society, throughout the thesis I made sure to test what was emerging from my interviews against the literature and therefore to ensure that all the key aspects of my argument developed in the institutional context were generalisable to experts as individuals as well as in their role as representatives of their institution.

Online communities of practice such as Wikipedia editors were analysed as exemplars of challenge to offline expert authority (Chapter 3). Taking issue with the position of scholars such as Wilson and Likens (2015) who denied that Wikipedia editor community had any claim to expert authority by judging them from the stand-point of offline experts, the analysis in my study found new and powerful forms of capital specific to the online field. These included *time capital* and an online version of *social capital* grounded in the *doxa* of Wikipedia itself, strongly determined by the culture of *democratic levelling* emergent among the editor community. The key point being that within the internal logic of the online field, Wikipedia editors had their own authority and – and this was a crucial insight made possible by applying the conceptual framework – when offline experts engage with Wikipedia editors they do so in the editors' online field not their own, subject to the editors' definition of authority not their own. Misapprehension about this key point is what causes offline

experts to be surprised and unprepared for the strength and effectiveness of challenge they experience online.

Broadening the perspective away from Wikipedia, the analysis demonstrated that the algorithms powering search engines like Google are challenging the key role of institutional experts as gate-keepers to knowledge and educators of the public at large (Chapter 3). It is the role of such algorithms that makes challengers like the Wikipedia editors so effective because the majority of traffic requesting information about academic subjects online is directed to Wikipedia pages rather than to content controlled by institutional experts. My argument accounts for this effect by adding *algorithmic capital* to the set of capitals native to the online field. The importance of accruing *algorithmic capital* online for the authority of experts is shown to be in direct proportion to the disruptive effect of hidden algorithmic biases. These are the mechanisms at least partly powering the *filter bubble* effect aiding the spread of 'fake news' online and feeding in to the preferential attachment (Barabasi, 1999) effect that makes sites like Wikipedia so dominant online.

This study makes a key contribution to the debate about expert authority online (Eysenbach, 2007; O'Neil, 2009; Shirky, 2010) by defining comprehensively how technological affordances such as algorithmic bias, utility of the user interface and the speed and real-timeness of updates of information on key technology platforms affect the authority of institutional experts online. By combining the understanding of such affordances with the analysis of the cultural aspect of online communities of practice (Chapters 5 and 6), I was able to define a new type of authority, called *socio-technical authority*, that is supported by the full range of capitals native to the online field and further empowered by the technological affordances inherent to the *doxa* of the internet. *Socio-technical authority* is what allows online challengers, whether Wikipedia editors challenging the Royal Society, or members of a local history association such as the *Undershaw Preservation Trust* challenging English Heritage, to so often out-compete the institutional experts despite all the institutional resources the latter can bring to bear.

However, it would be simplistic to focus just on the opposition between the online field and the offline field of expert knowledge production, between institutional authority of experts and the *socio-technical authority* of their challengers. Instead,

this analysis demonstrated that the situation is more complex than that. The different types of capital, both those native to the offline field like *cultural* and *social capital* and those native to the online field like *time* and *algorithmic capital*, are able to project across the porous offline/online field boundary. The analysis of interviews from both English Heritage and the Royal Society reveals multiple examples of capital projecting from one field to another. There is a cost inherent in this process: the capital native to one field is not quite as effective in another. There is also a delay to the effectiveness of capital building back up again which I characterise as taking time for *acclimatisation*. However, the possibility of this exchange explains why Wikipedia editors, though careful to guard their own independence, nonetheless use offline expertise and associated qualifications to gain greater authority *among themselves.* Or why an august body such as the Royal Society cares so much how many followers it has on Twitter or likes on Facebook, competing in accruing this inherently online form capital with its offline rivals such as the Royal Institution.

The reality of *socio-technical authority* and its pervasive influence not only online, but increasingly in the offline field too, points to the redefinition of what an expert is. No longer is expertise solely bestowed by the closed group of existing academic expert institutions and marked with their *symbolic capital* such as degrees, fellowships and honours. In the 21st century expertise is increasingly *emergent*, bestowed by the 'public' through symbols of likes, shares and high placements in search results. An expert who is not perceived as such by the audience they are addressing can weaken in their authority. This is just as true for individual academic experts with whom a lot of the existing literature on the challenges to expertise online is concerned, and for institutional experts who are the focus of this thesis.

The reality of this shift is clear when even in the offline field of expert knowledge production governments and philanthropies increasingly take account of public engagement activity and so-called *altmetrics* to measure success of academic endeavour. Yet, this is not to claim as some do (cf. Shirky, 2010) that popularity - what I term the *Will to Capture Attention* - is the only measure, that quality of knowledge does not matter. Rather, the rules of who defines quality and how, remain as contested as ever in the network of knowledge-power. The change is that new actors are entering this contest and challenging the institutional experts.

At the end of my analysis I break both from those academics underplaying the reality of expert authority being exercised by the new type of expert online, and from those who ignore the fact that institutional experts still wield enormous power in defining the *discourse* over what counts as knowledge. Indeed, *socio-technical authority* is not limited to just online experts to possess. Prescient institutional experts, understanding the scale of technological disruption underway are beginning to accumulate their own *socio-technical authority* in addition to the institutional authority they already possess. My conclusion therefore is that we are entering a period of transition. A new *Episteme* characterised by the *Will to Capture Attention*, is emerging in the online world but already affecting the offline world as well, and privileging those with greater *socio-technical authority*. At the same time, the existing *Episteme* of the *Will to Know* still exercises its influence over our lives, through the platforms supporting the online field harvesting our information and converting it into *economic capital*.

In the next part of this chapter I will consider some conclusions from comparative analysis carried out as part of the study into the four platforms of Wikipedia, Google, Facebook and Twitter, and into the differences between the two expert institutions, English Heritage and the Royal Society.

Reflections on platform and institutional differences

One of the distinguishing features of this study compared to previous research in this space is that it set out from the start to study multiple platforms: Wikipedia, Google, Facebook and Twitter, with respect to expert authority, rather than focussing on just one. The analysis showed that the platforms were not isolated from each other, but rather formed a complex integrated ecosystem, with the online field of expert knowledge production spanning all four of them. Both English Heritage and the Royal Society used all four platforms and used them in ways that were specific to the platform but consistent with each other. For example, both organisations used Facebook and Twitter, and both used the latter platform to communicate more with the expert audience and the former focussing more on the wider public (see Chapter Five).

The same behaviour was also observed in at least one of the communities of practice that was examined during the interviews and at later analysis stage: the *Undershaw Preservation Trust* discussed in Chapter Six. The Trust used multiple platforms at the same time but in slightly different ways to achieve its objective of influencing English Heritage's listing decision. Specifically, Facebook was used as the main channel to gather support and apply pressure on English Heritage. Messenger was used to communicate with members of the community and English Heritage. The Trust's website was used to provide more detailed information about the campaign to preserve Undershaw House. Finally, traditional media was actively courted to engage interest in the Trust's campaign (see Chapter Six for more detail). This behaviour, and that of the two expert institutions, conforms exactly with what would be expected from the *platform multiplexity* effect (Haythornthwaite, 2005) that sees users create different strategies tailored for each platform, but engage across all at the same time.

Where the analysis was able to add new insights to the collective academic knowledge in this space is in demonstrating the way aspects of the *doxa* of the online field, such as affordance of utility, algorithmic bias and the effects of the *Stream*, crossed over platform boundaries. For example, algorithmic biases were prevalent not just in Google search algorithm, but also the 'push' type algorithms powering the Twitter and Facebook timelines, and it is these biases that ensured that Wikipedia ended up being at the top of search results for so many queries in the expert domain. This in turn meant that the new types of capital identified in this thesis – for example, *time capital* and *algorithmic capital* – had an important influence on expert authority on all the platforms considered. This allows me to conclude that *socio-technical authority* is platform agnostic with respect to the four platforms considered.

The position above does not mean to imply that there are not platform-specific peculiarities in how elements of the online *doxa* behave. For example, I agree with Weltevrede, Helmond and Gerlitz's (2014) caution that different platforms offered quite different experiences of 'real-timeness', which any analysis needs to account for. However, at a higher level, my research shows that a feature like the *Stream* and the associated concept of *time capital*, can be identified on all the platforms considered, even though it may affect users slightly differently on each, just as

Weltevrede, Helmond and Gerlitz (2014) point out. This read-across of elements of *socio-technical authority* across different platforms despite more specific variability makes it possible to understand how concepts and theories defined in prior literature in the context of different specific platforms might relate to each other. Indeed, in Chapter Five I proposed a connection between the concepts of *democratic levelling* (Winner, 2009) and *privacy paradox* (Barnes, 2006), which, to my best knowledge, has not been made before.

The second methodological approach used to elicit a richer analysis was to choose two expert institutions in very different domains of knowledge: one in the humanities, English Heritage, and one in natural sciences, the Royal Society. The conclusion of the analysis was surprising in what it did not reveal. It revealed no noticeable differences in how expert authority is applied and is challenged in the online field of expert knowledge production that could be ascribed to whether the field of discussion was the humanities or science. Nor was there any difference noticed in how the mechanisms of gaining *socio-technical authority* described in this thesis, including the different new types of capital, worked, depending on whether it was English Heritage or the Royal Society doing the engagement. In fact, the only difference between the two expert institutions noticed was connected not to the humanities/sciences split, but to the fact that English Heritage has a legal status and role in its field of expertise, but the Royal Society does not (see fuller discussion in Chapter Five, Part II).

In the next part of the chapter I will briefly reflect on how the arguments of my own analysis could shed light on my experience as a denizen of both the online and the offline fields of expert knowledge production in my dual roles of academic and technologist.

Reflections on own role as participant observer

The conceptual framework created as part of this research project has had an additional unexpected consequence: it has provided me with the tools to analyse my own approach to my research at a meta-analytical level as I went along. In doing so, I followed in the footsteps of Pierre Bourdieu (1972), whose own approach to

sociology and anthropology was to mercilessly cast the light of critical analysis back on himself as the researcher, to help diminish the chance of bias. Bourdieu called this approach *reflexivity*. I was also able to tap into the ideas of Bauman (1989) about not shying away from the consequences of personal action as a researcher and making own behaviour - and changes therein brought about by the encounter between the researcher as the subject and the object of the research - a core part of the analysis.

My conceptual framework allows me to see that where my own *cultural* and *social capital* are concerned, I have at times taken, or been tempted to take, the role of a local online expert challenging offline experts. As discussed in Chapter One, I have been very aware from the beginning of my research of the potential conflict of interest inherent in being both a researcher of a field and a practitioner taking part within it, in my role first as Head of New Media in English Heritage and then Head of Data & Innovation at the Wellcome Trust. I will not repeat the full discussion here again, but I will revisit my dual role from the new angle made possible by my own analysis.

Specifically, in my position of non-academic expertise as a technologist within these expert-based organisations, I regularly utilised aspects of what I now know to be *socio-technical authority* to challenge offline experts. To take one example illustrative of numerous similar cases, when I was in charge of redesigning the main English Heritage website in 2009-2010 I had to argue against academic experts in the offline field of heritage protection over what key sections of that website needed to be called, how they would look and what content they would have. One key section dealt with the listing of historic buildings and there ensued a significant debate about the naming of this section. The experts in English Heritage contended that the section should be called ‘designation’ as that is the legal term.[77] I argued against this, pointing out that the general public used the term ‘listed’ and ‘listing,’ not the term ‘designation.’ Therefore, my advice was to call the section ‘listed buildings’. To try and win the discussion, I presented analytics from Google searches that clearly showed that ‘listed building’ was by far the most looked for term and that the English

[77] The legal term ‘designation’ encompasses a number of procedures which could have different names according to the type of structure being discussed So, buildings were listed, monuments like castle ruins were scheduled, but the overall legal terms for all of this activity was designation.

Heritage website was coming at the top of Google search results for it and related terms. Eventually I persuaded the experts to a compromise, and called the section on the website ‘listing and designation’ to at least get the keyword into the title alongside the technical term.

Looking again at this example, it is clear that the conversation was happening with experts who normally operated in the offline field of heritage protection, where their argument for the correct technical term ‘designation’ was entirely logical. However, I was able to demonstrate that the debate was actually being held in the online field not the offline field by focusing the debate about the behaviour of users on the website, not what terms are used in academic conferences or government policy papers. Having successfully shifted to the online field, I was able to alter the *discourse* to be about aspects of the *doxa* of that field, such as the importance of findability. I was then able to use my online *cultural capital* in the form of greater knowledge of how websites operated, and my *algorithmic capital* leant to me by the fact that the content I cared about was returning higher in search with the keywords being championed, to successfully challenge the experts. It is clear to me, that I was acting as an expert in the online field of knowledge production, challenging the offline experts’ authority and thus enacting the dynamics I was to later define in my analysis.

Reflections on the issue of speed and the relevance of this research

Using my conceptual framework also allows me to better understand the connection between my own *time capital* as a researcher and the speed of change in the technologies I was studying. Castells (2001), in an introduction to one of his influential studies of the internet, was humble enough to note that his study ‘does not exhaust the sources of available information because research cannot be completed when the object of the research (the Internet) develops and changes much faster than the subject…’ (Castells, 2001, p. 6). It is a sentiment I fully support. Doing my research part-time, over a period of eight years while focussing on the fast-changing digital world, in effect, exposed my own lack of *time capital*. I found it difficult to

match the pace of change of the technology and the platforms, like Facebook and Twitter, and algorithmic technology that I was trying to study and reflect on.

There were two areas in particular where I felt the results of my fieldwork – which, after all, was conducted from 2012 to 2014, a whole technological age ago – and the analysis based on them were under threat of being overtaken because of the speed of advances in the technology industry. They are to do with the contested area of filter-bubbles in social media, and the increasing importance of machine learning. The technology behind both of these areas have been in quite gradual development for a number of years, but tipped over the threshold to be on the radar for social science only in the past couple of years. In the case of filter-bubbles on social media, the push over the threshold was provided by the USA election in 2016 and the entry into public consciousness of the phrase 'fake news', which at first was directly attributed to filter bubbles.[78] In the case of machine learning, the interest threshold was also breached in 2016, when AlphaGo software produced by Google Deepmind defeated the Korean Go champion. After these two events, the interest in these areas accelerated, with a significant increase in the number of relevant papers being published (cf. Mittelstadt et al, 2016; Busby, 2017; Spohr, 2017).

The spike in papers about machine learning and filter bubbles in social media happened just as I was entering the last stages of my write-up of the thesis. The issue for me was that the interviews conducted four years previously at first glance had nothing to say about either of these developments. Fundamentally, my interviewees did not provide me with any examples or references to these phenomena because they were not front of anyone's mind back in 2012. However, reading through the latest literature on both topics quickly reassured me that although the phenomena were not themselves mentioned, the theory I derived based on the interviews was flexible enough to fully account for these new phenomena too.

As mentioned in Chapter Four, the concept of *algorithmic capital* is agnostic of the nature of the agent possessing this capital, it can be an AI chat bot producing viral posts on Twitter as surely as a human agent. *Algorithmic capital* is just a means for calculating and comparing the respective effectiveness of agents in getting their content in front of viewers or readers. Similarly, in my role of Head of Data &

[78] See my discussion in Chapter Four for a more nuanced view of the connection between the two concepts.

Innovation in Wellcome Trust, running data science teams, I know as a participant observer, how crucial the concept of algorithmic bias is both for machine learning based analysis of data and for filter bubble type effects in the spread of information on social media. It is clear then that the concepts derived from my fieldwork and grounded in search type algorithms are easily translatable and relevant for the new generation of AI algorithms prevalent today.

I was able, therefore, to balance-out my deficiency in *time capital*, seen in my prolonged write up of the analysis of my research, through the application of my *online cultural capital* gained as an actor in the field of AI in my current role at the Wellcome Trust. My practical knowledge was put to good use in being able to situate the results of my 2012 and 2014 fieldwork in the context of the latest research, as I wrote up my thesis and tested the efficacy of my argument on the new examples arising from the developments in technology.

Going forward, as I mentioned in Chapter Six, as the field of expert knowledge production will be increasingly disrupted by application of AI based technology to everything from discovery of new molecules to the distribution of citations of academic papers, the concepts I have created will not only hold their explanatory value, but increase it.

Recommendations and Future work

Focusing the work on the dynamics of power between offline expert institutions on the one hand, and local online challengers to expert authority on the other, has left many areas examined only in passing. This creates opportunities for follow-on research.

One element my empirical evidence did not raise, surprisingly, was the issue of identity online. The interviewees at both English Heritage and the Royal Society did not think issues of identity had much impact on the authority of their organisation and, even when prompted; nor did they raise pertinent cases where authority was challenged in that way. However, from existing literature concerning the impact of verifying identity of interlocutors on social media on the quality of conversation

(Dahlberg, 2001), or about the attachment individuals have to the avatars they created in the online field (Stryker, 2012; Hammersley, 2013), it seems clear that there is an interesting question that can be explored in further research about to what extent *socio-technical authority* needs to attach itself to the 'real' identity of an expert online or whether it can equally well attach itself to an avatar. This raises a further question for my conceptual framework of what the fluidity of identity online means for the mechanisms of projecting authority from the offline world to the online world, or vice versa.

The issue of speed is particularly interesting to me both in my role as a researcher of societal impacts of technology, and in my role of practitioner in the digital industry. The latter role is grounded in many years of experience of creating digital strategies for organisations and driving the cultural changes required to successfully realise these strategies. While engaged in this work, I have observed that the different speed and rhythm of change in the online field and the offline field are often the hardest hurdle to overcome in terms of cultural and organisational change. Having now considered the very same effect through a sociological lens and, in the course of my research, having felt its effects on myself as a researcher, I am motivated to do some further investigation into this area.

The speed and rhythm of advances in academia, for example, are set in great part by the mechanisms of funding, publication and peer review. These mechanisms are ripe for change and in my role in the Wellcome Trust, I have been involved in the push for open access journal publishing, sharing research data openly and speeding up the process of publication by encouraging the use of pre-publication services, to take just a few examples. It would be an interesting area for further research to examine how such changes in process might affect the mechanisms I described in this thesis, including the influence of *time capital* on expert authority. Equally, it would be productive to examine the societal impact of the break-neck pace of technological development. There is clearly an issue that technology is developing faster than society can understand or even think through its impacts, and that we are all potentially affected by *technological somnambulism*, whether we are aware of this or not. An interesting practical question is whether it is possible to better fit the speed and rhythm of sociological assessment of technological impact to the pace with which technology is changing.

To enable sociologists to assess technological impact in real-time, matching the pace of technology, and then, through doing this, inform the public *discourse* about the benefits or dangers of technology, it seems to me necessary to accept Habermas' (1971) challenge and empower academic experts to be able to engage more closely with the public. As discussed in this thesis, the arena of this engagement has to be in large part the online field, because that is where the public are increasingly searching for answers to any and all questions.

The central recommendation of my thesis for institutions that claim academic expertise, whether English Heritage, the Royal Society, or, indeed, the Wellcome Trust, is to carefully engage with online communities of practice. Not despite them offering challenge, but because of it, even accepting that among the many actors in the online field some will be earnest in the pursuit of knowledge, but others will be rogue players in pursuit of money or mischief. As discussed at the end of Chapter Six, these online communities are like the cafes and debating societies of the 18th Century London or Paris, full of both philosophers and rogues, insight and fake news, but all part of rich stimuli provoking debate and creativity. These places engage a greater number of people than ever in the process of expert knowledge production, making it more open, yet at the same time are far from perfect, persisting in excluding large parts of the population, notably women and voices from the large parts of the developing world locked out of the internet revolution.

In challenging offline expert authority, these communities are enacting the basic principle of science: question everything. Offline experts, including institutional experts, have an important role to play in the unfolding transformation as one *Episteme* is gradually displaced by another, as we move from a world dominated by a *Will to Know*, to one dominated by a *Will to Capture Attention*. This role may no longer be as exclusive gate-keepers to the 'correct' knowledge, but as bridge-builders between the technicalities of the academic world and the curiosity of the wider public. In Bauman's (1987) insightful terminology, it is time for offline experts and expert institutions to become *interpreters* rather than *legislators*. For this new task to be successful, the experts need to take time and build *socio-technical authority* in the online field of expert knowledge production, while retaining their existing authority as experts. What this thesis has shown is that these two types of authority are not mutually exclusive, but rather mutually reinforcing.

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Appendix 1: List of significant incidents

This is a matrix of significant incidents of challenge to the expert authority of English Heritage and Royal Society, matched to the interviewees who mentioned the incident and the platforms the incident involved.

Incident summary	Case study	Platform	Interviewees
1. Dale Farm In this case study, a group of activists made a formal application to list a set of gates at the Dale Farm travellers' camp, in order to force the local council to stop their eviction proceedings against the travellers. The case had no merit from the view of the gates as built heritage, but because the application was made formally, English Heritage had no choice but to research the case and make an official recommendation. This caused a social media storm from opponents of the travellers' camp, saying English Heritage was interfering and wasting public money on this 'spurious claim'. See chapter five for full analysis.	English Heritage	Twitter	EH3, EH4, EH5, EH6

2. Undershaw House A local interest group Friends of Undershaw House, tried to make English Heritage intervene in a planning case being heard by a local authority about turning Undershaw House – the former home of Sir Arthur Conan Doyle – into a set of flats. They did this by exerting public pressure via English Heritage's main Facebook channel. See chapter six for more detailed analysis.	English Heritage	Facebook	EH3, EH4, EH5, EH6
3. Stonehenge English Heritage was determined that as the official custodian of Stonehenge for the nation, it was important that it published the most correct historical information about this World Heritage Site. However, it was concerned that its official web pages about the monument came further down in search than an unofficial site that had the url www.stonehenge.co.uk, whose information, English Heritage experts felt, was often erroneous. A range of	English Heritage	Google and owned website	EH1, EH3, EH4, EH6

tactics was deployed to change this. See chapter four for more detailed analysis.			
4. Listed Buildings Online English Heritage found that its own expert researchers were using the unofficial but easier to use Images of England website than the official archive operated by English Heritage called Listed Buildings Online. This was despite the fact that these experts knew that Images of England information was out of date and no longer accurate. See chapter four for more detailed analysis.	English Heritage	Google and owned website	EH3, EH4, EH5, EH6
5. English Heritage Wikipedia English Heritage found it difficult to change Wikipedia pages about itself and some of its famous properties, like Stonehenge and Eltham Palace, even though its experts could 'prove' that information on those pages was erroneous. See chapter three for more detailed analysis.	English Heritage	Wikipedia	EH2, EH3, EH6

6. Nelson Mosque When a mosque was listed by English Heritage there was an outburst of criticism, including some racist abuse, on the English Heritage's Facebook page. The organisation's communications team deployed their knowledge of how Facebook operated to block some offenders and post replies to others in such a way as to minimise further escalation of the incident.	English Heritage	Facebook	EH6
7. Royal Society Wikipedia The Royal Society employed an in-house Wikipedian to manage pages on topics the Royal Society felt it had ownership of. See chapter three for more detailed analysis.	Royal Society	Wikipedia	RS1, RS3
8. Fracking report The Royal Society ruling council was concerned that when it produced an authoritative report into the impact of and science behind Fracking technology, this report could not be easily found online. Instead	Royal Society	Wikipedia, Google and owned website	RS1, RS2, RS3

Wikipedia pages on fracking and an activist Anti-Fracking website were coming top of search rankings, both of which had, from the Society's experts' point of view, incorrect and one-sided information. See chapter four for more detailed analysis.			
9. Climate Change debate The Royal Society held an online debate about the science behind Climate Change with its own scientists asking questions of a panel of leading climatologists. The debate was also opened up to followers of the Royal Society's social media channels which generated some nervousness among the experts involved. See chapter five for more detailed analysis.	Royal Society	Facebook	RS1, RS2

Appendix 2: Interview Questions

1) Can you tell me how you identify as an expert – e.g. what does expertise mean to you both as an individual and as a representative of your institution? Do you have any examples of how definition of expertise might change online?

2) In your institution's interactions online have there been any incidents where your authority as experts has been challenged by rival claimants to expertise?

3) In your institution's interactions online have there been any incidents where the kinds of barriers and controls in communication that exist offline, were undermined? For example, your director being contacted directly on their social media channel, or your experts engaged in an argument via Twitter etc. How was it resolved?

4) In your institution's interactions online have there been any instances where the findability of key content that your institution cares about may have been adversely affected, or outperformed by rival content from other sources? What, if any, was the impact on perception of authority?

5) In your institution's interactions online can you think of examples where your institution's symbols of authority, like tone/language/copyright/logo may have proved ineffective or have been subverted?

6) In your institution's interactions online can you think of examples where facts / data / 'truth' important to your institution could not be successfully enforced / defended online? For examples problems with policing out of date information, encountering conflicting positions or versions of the 'truth', inaccuracies on Wikipedia or other websites.

7) In your institution's interactions online can you think of instances where your institution or its representatives had issues in establishing your identity and/or the identity of the interlocutor online?

8) In your institution's interactions online can you think of any examples of conflict between rival sources of authority within your institution? For example,

local teams doing their own thing on Twitter / Facebook; independent expert blogs run by internal staff; examples of social media protocol & crisis guidance not being followed by staff.

9) In your institution's interactions online can you think of any examples where your institution was accused of intruding into private space / conversation during an attempt at online engagement?

10) In your institution's interactions online can you think of any examples where there was an issue caused by the persistence of data online? For example, old, potentially problematic statements published online suddenly re-emerging?

11) In your institution's interactions online are you aware of any differences between the profile or behaviour of online audiences vs your offline audiences?

12) In your institution's interactions online can you think of any examples where your encountered anti-authority sentiment or push back directed at your institution by individuals or communities online? Is there a difference between online and offline worlds in this respect?

Appendix 3: English Heritage: Undershaw Case Study

Selected posts and comments re Undershaw on English Heritage timeline from November 2010[79]

Ref App1/A [name deleted] *to* English Heritage

· 16 November 2010 ·

Although I don't live in the UK and I'm not British I think it's a disgrace not to preserve Undershaw as a part of the English Heritage. Sir Arthur Conan Doyle was a great writer and a national patriot and his remembrance should be treated with respect.

[name deleted] *to* English Heritage

· 17 November 2010 ·

Please, save Undershaw!

[name deleted] *to* English Heritage

· 17 November 2010 ·

Very short-sighted in my opinion not to up-grade the 'Undershaw'.

[name deleted] *to* English Heritage

· 17 November 2010 ·

I am also a suporter of Undershaw and like all the others feel that this home must be saved as it is a huge part of Englands history. I would like to see English Heritage support Undershaw and not allow it to be distroyed.

[name deleted] *to* English Heritage

· 18 November 2010 ·

Undershaw would make a great place to visit under the loving care of English Heritage. I have visited many EH properties when visiting England (from Adelaide,

[79] These posts are publicly available on Facebook.com and were retrieved on 19/05/2017 13:23 via Facebook search. For example see https://www.Facebook.com/search/top/?q=undershaw%20preservation%20trust%20english%20heritage and https://www.Facebook.com/search/str/undershaw+english+heritage/keywords_top

Australia) and would love to be able to see this property with the appropriate care it deserves.

Ref App1/B English Heritage

· 18 November 2010 ·

Thank you for your comments about Undershaw. We are really interested in the history of buildings, & a number of noted figures' houses are listed for these reasons. Regrettably the architecture of Undershaw is not remarkable enough to put this house in the top 10% of listed buildings in the country, but we do recognise Conan Doyle's enduring literary significance which is why Undershaw is listed.

Ref App1/C [name deleted] *to* English Heritage

· 18 November 2010 ·

All anyone is asking is that you reassess the case of Undershaw (sounds like a Sherlock Holmes novel). I cannot believe that listing status should be determined solely on a building's architectural merit. The reasons for wanting to preserve this house have very little to do with its structure.

Ref App1/D English Heritage

· 18 November 2010 ·

Further to our earlier message about Undershaw - we have released a full statement on our website - please see here: http://ow.ly/3bNL7[80]

[name deleted] English Heritage, may I politely just say that the house is being divided into 3 apartments, not 2 as stated in your statment, by floor to ceiling concrete block walls and modernised throughout. The history, ambience and integrity of the building will be totally destroyed.
18 November 2010 at 14:37 ·
LikeShow More Reactions
.
22

[80] The short url link used in this Facebook post is now broken, but the original statement from English Heritage that it pointed to is available on the Wayback Machine's archived copy of the English Heritage site from November 2010: https://web.archive.org/web/20101120050116/http://www.english-heritage.org.uk:80/about/news/eh-responds/undershaw/

Ref App1/E

English Heritage Thank you for pointing out that it is 3 apartments, not 2 Lynn, we will amend this on our statement. We do share your and others' disappointment. If there was any way in which we could play a greater part, we would seriously consider it but the planning decision lies with the local authority. Thanks for your comment Ben, I hope more private investors will come forward in the future too!
18 November 2010 at 17:43 ·
LikeShow More Reactions
.
11

[name deleted] Thank you English Heritage - it would be safe to say that we expected more support from you guys.
18 November 2010 at 18:10 ·
LikeShow More Reactions
.
11

[name deleted] I do believe that support from English Heritage would have made a difference when the local authority considered the planning application. And, I still believe that some intervention on your part could reverse the decision.
18 November 2010 at 18:47 ·
LikeShow More Reactions
.
22

[name deleted] ‘We do share your and others’ disappointment. If there was any way in which we could play a greater part, we would seriously consider it’

but that's not strictly true, is it? Because you could have done when this proposal was made, or even now you cou...See more
19 November 2010 at 09:54 ·
LikeShow More Reactions
.
22

[name deleted] We do realise that English Heritage cannot save every building, but we thought Undershaw might have been an exception because of the history that shrouds it's very walls.
21 November 2010 at 10:03 ·
LikeShow More Reactions

English Heritage It is always disappointing for us when we can't get behind supporters of the historic environment, but sometimes we have to accept that adaptation for a new and viable use is the best option in the circumstances. And yes, having to make pragmatic compromises often gives us sleepless nights.
22 November 2010 at 10:21 ·
LikeShow More Reactions

[name deleted] But in a case like this, isn't it rather a capitulation than a pragmatic compromise?
22 November 2010 at 11:43 ·
LikeShow More Reactions

.

11

[name deleted] EH this is shortsighted of you in the extreme! First you failed to even list the iconic Tinsley Cooling Towers in Sheffield and now this! Appalling!
29 November 2010 at 20:49 ·
LikeShow More Reactions
.

11

Ref App1/F English Heritage

· 30 November 2010 ·

We do appreciate and share your concern for the future of Undershaw but as we have explained, English Heritage does not own Undershaw and has neither the funds nor the remit to take it over, even if the property were for sale, which it is not. What happens to Undershaw is a matter for the local council. We would be very happy to meet with the Undershaw Preservation Society in person to explain our position fully.

Facebook posts to other related groups on 18/11/2010[81]

Ref App1/G [name deleted] shared a Page to Holmes Sherlock's Timeline.

· 18 November 2010 ·

Please could
all Sherlock Holmes fans leave a comment to support the Save Undershaw

[81] These posts are publicly available on Facebook.com and were retrieved on 19/05/2017 13:23 via Facebook search. For example see https://www.Facebook.com/search/top/?q=undershaw%20preservation%20trust%20english%20heritage and https://www.Facebook.com/search/str/undershaw+english+heritage/keywords_top

Preservation Trust's campaign to stop the development of Arthur Conan Doyle's former home. Planning permission has already been granted to turn the house at Hindhead into flats after English Heritage refused to
upgrade the house's status. We need to convince them to review the case.
http://www.Facebook.com/…/Lon…/English-Heritage/173240995747

[name deleted] *to* The Sherlock Holmes Museum
· 18 November 2010 ·

Please could
all Sherlock Holmes fans leave a comment to support the Save Undershaw Preservation Trust's campaign to stop the development of Arthur Conan Doyle's former home. Planning permission has already been granted to turn the house at Hindhead into flats after English Heritage refused to ...

1-5 December 2010 selected posts and comments on English Heritage Facebook page[82]

[name deleted] EH had a magnificant opportunity to save Undershaw by upgrading it to Grade I or at least Grade II* when they were requested to do so by the Victorian Society in 2006. If you had done that we would not be in this difficulty today. You have now compounded this tragedy by apparently not responding to the massive alterati...ons to Undershaw and the huge additional wing and no public access which were allegedly referred to you by Waverley Borough Council in February 2010. Were you too ashamed to respond, had you no opinion in this matter whatsover? A damning indictment.

> **[name deleted]** Well, Well, Well, enlighting...
>
> 20 hours ago · LikeUnlike ·
>
> **Ref App1/H [name deleted]** Very much so, I think that meeting is in order and the press should be there also to ask questions as to why EH

[82] These posts and comments were publicly available on Facebook.com and were accessed and copied from Facebook.com in December 2010, as they were being posted on the English Heritage timeline. They were made available to me by interviewee EH6 following the interview.

did not step in and help and are refusing to do so now.....why would they allow our heritage to be treated like this unless they have an interest in some way with either the council or developers..... just a thought.

18 hours ago · LikeUnlike ·

3/12/2010 – 5/12/2010 Undershaw Preservation Trust Facebook page[83]

Ref App1/I

The Undershaw Preservation Trust English Heritage's thoughts on Sir Arthur Conan Doyle's house:

'Had it retained the sense of connection that Jane Austen's house at Chawton has, for example, it might have been a different matter. But that connection was lost long ago. It would undermine the value of listing if we changed our minds without new evidence ...but simply under pressure from dedicated enthusiasts'.

2 people like this.

[name deleted] Nonsense. They've gone down in my estimations.

Friday at 15:40

Ref App1/J [name deleted] Could you post this on my Save Undershaw group **[name deleted]** ?

Friday at 15:41 ·

The Undershaw Preservation Trust Will do **[name deleted]** .

Friday at 15:44 ·**[name deleted]** Pressure. Pressure? We are all just passionate. I prefer that word, thank you very much.

Friday at 15:44 ·

[83] These posts and comments were publicly available on Facebook.com and were accessed and copied from Facebook.com in December 2010, as they were being posted on the Undershaw Preservation Trust Facebook timeline. They were made available to me by interviewee EH6 following the interview. The Undershaw Preservation Trust Facebook page is no longer extant.

Ref App1/K [name deleted] He had the blooming thing built! How much of a connection do they require? Their use of 'Enthusiasts' leaves a bitter taste too. Seems to suggest something along the lines of 'well meaning enough but ignorant of any knowledge that would make them worth listening to'. Grrr!

Friday at 15:56 ·

[name deleted] Enthusiasts is a strange word, sound a bit like train spotters or something but it is pretty evident that English Heritage does not want to know, and with all the economies being thrust on us these days I suppose they have a good excuse to refuse to become involved.

Friday at 16:02 ·

The Undershaw Preservation Trust You can all understand now why we are so disheartened.

Friday at 16:12 ·

[name deleted] This sounds like a cop out to me if they helped to rebuild the house and educate people to the grate $man that lived there then the connection would be remade bring history back to life and show people what a grate history has is this not englis heritage are ment todo

Friday at 16:14 via Facebook Mobile ·

[name deleted] I get enthusiastic about games and nights out. This is not even in the same league as having a passion for a cause. Yes **[name deleted]** I can so understand why you all are disheartened. Let's remain vigilant until we succeed and remain positive that we will.

Friday at 17:29 ·

[name deleted] I mean what evidence do they want!? Are they doubting it's a genuine Sir Arthur Conan Doyle's house? It's completely mind boggling!

Friday at 19:40 ·

[name deleted] I read the original message from English Heritage - and all I could think was.
WHAT.....???

Friday at 23:55 ·

[name deleted]

That is truly an ubelievable statement by English Heritage. How do they justify Stonehenge then, a bunch of stones in pre historic times. Can they claim to know the connection to that? No of course not! Specuation is rife over the purpose o...f Stonehenge! With Undershaw we know it was commisioned and built by Sir Arthur Conan Doyle and was in the relatively recent past. i'd say we have more connections to Undershaw than a pre historic monument!!! And what's with calling the Undershaw Presevation Society ‘pressure from dedicated enthuisasts’ I say that smacks of bitterness myself. :(See more

15 hours ago ·

Ref App1/L <u>The Undershaw Preservation Trust</u> I agree **[name deleted]**, I don't know what EH is thinking. The sooner we get this TV documentary off the ground the better. We hope then to go to town on those responsible for allowing this tradegy.

11 hours ago ·

[name deleted] Chawton was largely sold off after the war and the house subdivided into flats. It too was left to rot until by some miracle the decline was halted with the sale of a 125 year lease to a new charity. I'm sure Jane Austen enthusiasts really felt their 'sense of connection' when they visited back then!