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Rethinking gaming: The ethical work of optimization in web search engines

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Abstract

When measures come to matter, those measured find themselves in a precarious situation. On the one hand, they have a strong incentive to respond to measurement so as to score a favourable rating. On the other hand, too much of an adjustment runs the risk of being flagged and penalized by system operators as an attempt to 'game the system'. Measures, the story goes, are most useful when they depict those measured as they usually are and not how they intend to be. In this article, I explore the practices and politics of optimization in the case of web search engines. Drawing on materials from ethnographic fieldwork with search engine optimization (SEO) consultants in the United Kingdom, I show how maximizing a website's visibility in search results involves navigating the shifting boundaries between 'good' and 'bad' optimization. Specifically, I am interested in the *ethical work* performed as SEO consultants artfully arrange themselves to cope with moral ambiguities provoked and delegated by the operators of the search engine. Building on studies of ethics as a practical accomplishment, I suggest that the ethicality of optimization has itself become a site of governance and contestation. Studying such practices of 'being ethical' not only offers opportunities for rethinking popular tropes like 'gaming the system', but also draws attention to often-overlooked struggles for authority at the margins of contemporary ranking schemes.

Keywords

ethical work, gaming the system, measurement, search engine optimization

One Saturday morning in early February 2011, American retailer JC Penney was in for a rude awakening. Under the headline 'The dirty little secrets of search', the *New York Times* had published a lengthy exposé that documented how the company had used questionable techniques to boost the ranking of its website in Google Search results (Segal,

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2011). Rather than relying on its name and popularity, JC Penney had hired a search engine optimization (SEO) firm that bought and traded links from thousands of unrelated websites to JCPenney.com. Since Google's algorithms read such links as indicators of a website's relevance, the company managed to score top rankings for search terms like 'dresses', 'bedding' and 'skinny jeans' – a lucrative position to be in for an online retailer during holiday season. When Google's web spam team was confronted with the evidence, they suggested that an algorithm update had already been rolled out to remedy the situation. They further confirmed that they had applied 'manual action' temporarily to penalize the company. By the 10th of February, the average position of JCPenney.com across 59 search terms had dropped from 1.3 to 52 before the penalty was lifted four weeks later (McGee, 2011).

The case of JC Penney highlights a common concern in the management of algorithmic systems: the problem of 'gaming the system'. As computationally generated metrics, scores and rankings take on an ever more important role in ordering our lives, regulators, managers and engineers are increasingly concerned about the possibility of outside interference. If those subject to these systems try strategically to manipulate the process to achieve more favourable ratings, it is argued, the predictive power of these systems will deteriorate and disadvantage honest individuals (Hu et al., 2019; Milli et al., 2019; Morris, 1975: 37). Originally cast as a methodological concern over objectivity and accuracy in scientific measurement (Campbell, 1957: 298), gaming has more recently been studied in a variety of social settings, including healthcare (Bevan and Hood, 2006), university rankings (Espeland and Sauder, 2007), citation metrics (Biagioli, 2016), image verification (Frow, 2012) and computer games (Consalvo, 2007). In these discussions, gaming tends to be portrayed as a threat to the integrity of systems, an inevitable evil that is best to be eradicated. As Strathern (1997: 308) puts it, 'When a measure becomes a target, it ceases to be a good measure'.[1]

While it is tempting to dismiss reactive practices categorically as 'misconduct' or 'bad behavior' (Biagioli, 2016: 201), the situation is more complicated. As the field of Science and Technology Studies (STS) has shown, users rarely play the roles assigned to them by engineers and designers (Kline and Pinch, 1996; Woolgar, 1990). On the contrary, they have been found actively to 'appropriate' (Eglash, 2004: vii), 'co-construct' (Mager, 2012: 782) and 'work around' (Pollock, 2005: 497) technologies in unexpected ways. Similar observations can be made about 'data subjects', that is, those individuals who are the subject of contemporary data science (Couldry and Yu, 2018: 7). Although in theory the job of data subjects is to simply 'be themselves' as their activities are being recorded, tracked and analysed, in practice adjusting one's behaviour in response to being measured often is the only way to regain some degree of agency in a potentially oppressive setting – a practice that is even more important when data subjects lack effective formal recourse or due process to appeal an automatically generated judgement (Citron and Pasquale, 2014: 8).

Against this backdrop, it is no surprise that website owners have come up with a range of stratagems and tactics to improve their situation, such as tinkering with the content and structure of their websites as these are being indexed and interpreted. While they might not be in a position single-handedly to change the ranking mechanism, they can resort to optimization as a form of what Coleman (2017: S100) – following the work of Scott (1985)

– calls 'weapons of the geek'. These everyday forms of resistance may not reach the level of a full-blown protest, but can have powerful consequences in the aggregate for both the workings of the system and the situation of those who have to live with them.[2] Optimization practices can thus be seen as mediating a peculiar tension between desires to preserve the integrity of systems and attempts to maintain some autonomy on the part of data subjects. While a well-resourced and coordinated campaign like JC Penney's might be so obviously manipulative that it in fact deserves the label 'dirty little secrets', for others optimization can at least *also* be regarded as a legitimate attempt to exercise some agency vis-a-vis a seemingly authoritative system. In fact, this very journal offers detailed guidelines to 'help readers find your article' in web search engines (SAGE, 2015).[3] This raises some important questions for critical scholars of data science. If the moral status of reactive practices is not given, then how, when and for whom does 'gaming' become a matter of concern? How do data subjects and system operators establish, understand and navigate the boundaries between 'good' and 'bad' optimization? And what are the implications for our attempts at regulating gaming in contemporary data systems?

In this article, I suggest that we rethink the widespread trope of 'gaming the system' as part of a broader struggle for authority in algorithmic systems. Rather than taking for granted the idea of gaming as an undesirable side effect that needs to be eliminated, I am interested in how reactive practices come to be qualified as detrimental or desirable in the first place – and what the implications are for those who have to live with them. As work in STS and sociology has shown, the very act of labelling activities with normatively loaded terms like 'gaming' can be a powerful political device that 'places the actor in circumstances which make it harder for him to continue the normal routines of everyday life and thus provoke him to "abnormal" actions' (Becker, 1997: 179; see also Johnson, 2018: 304). Effectively deployed, the trope of 'gaming' establishes a distinction between 'good' and 'bad' behaviour towards a system that, in turn, creates a moral obligation which data subjects have to reckon with. The resulting work of *being ethical* in ways that will be recognized as such by system operators, I suggest, is an important site of governance and contestation in contemporary algorithmic systems.

In order to explore these questions, I draw on materials from ethnographic fieldwork with those who face these problems on a daily basis: SEO consultants in the United Kingdom. With a history of more than 20 years, web search engines are a particularly rich and relevant example of a data-driven system in which concerns about gaming have been salient (Mager, 2017: 241). Unlike more recent applications, Google Search has firmly been established as a 'door to reality' (Maurer et al., 2007: 20) and a device for the construction of personhood (Jones, 2017: 231) for millions of people around the world.[4] In this context, SEO consultants have emerged as a new cast of marketing professionals who help website owners improve their visibility in search results. Responding to a growing demand for optimization services, SEO consultants specialize in monitoring and understanding the workings of the engine to then employ a range of stratagems and tactics to help business owners, activists and even private individuals compete for attention. In this capacity, SEO consultants provide a particularly salient setting for studying the everyday work of optimization in the shadow of the engine.

Overall, I conducted 14 combined months of fieldwork with the British SEO industry. Starting out as an unpaid intern with a medium-sized search marketing agency in the

south of England, I was trained for three months in basic practices of SEO, accompanying projects in the retail, consumer finance and travel industries. The arrangement gave me considerable access to the day-to-day work at the agency and ensured ample opportunity for interviews, informal conversations and participant observation. Following this initial stint of fieldwork, I took part in two separate SEO training workshops in London and the British Midlands, attended industry conferences in England and the USA, followed conversations on web forums, blogs and social media, and interviewed 29 industry experts.[5] Having observed in detail how the ability to challenge search results was being tested, denigrated and refined, I propose that we develop a new appreciation of the often cumbersome and precarious work that data subjects and their representatives undertake. In doing so, this study does not only offer opportunities for rethinking widespread concerns about bias, manipulation and 'gaming the system'. It also draws attention to the often-overlooked struggles for authority at the margins of contemporary measurement technologies.

Reactivity in action

In the social sciences, practices like those employed by JC Penney and their search marketing consultants are commonly discussed as reactivity, the idea that 'measures elicit responses from people who intervene in the objects they measure' (Espeland and Sauder, 2007: 2). What makes the concept interesting is that it mediates a tension between two conflicting narratives of public measurement: discovery and accountability. As a *mechanism of discovery*, public measures are supposed to generate objective and reliable accounts of qualities that would not otherwise be available. As a *mechanism of accountability*, these very same accounts operate as public benchmarks, to which those measured can – quite literally – be held. While discovery is firmly grounded in a separation between what is and what ought to be, accountability thrives exactly on the confluence between the two (Strathern, 1997: 307). Against this backdrop, it is not surprising that the status of reactive practices is ambiguous. On the one hand, reactivity constitutes a threat to the validity of measures, a methodological concern well known from the controlled environments of scientific measurement. On the other hand, reactivity promises improvement on the terms of the accounts produced. The question, therefore, cannot be whether reactivity is either good or bad, a promise or a threat. Most likely it is both. Rather, the question is how those who face these problems on a daily basis go about managing the tension and navigate the boundary between 'good' and 'bad' reactive practices.

In the case of web search engines, reactive practices have been around for as long as the engines that they try to influence. Being present in 'the war zone of the ten blue links', as one interlocutor described the first page of results to me, can make or break a business, reputation or career. An online retailer of yoga mats, for example, can turn a failing business into a success by ranking on page 1 for 'yoga mats'. A campaign by anti-fracking activists will rise and fall with their ability to rank for search terms like 'hydraulic fracturing'. And a job applicant might be concerned about old party photos that appear when searching for their name. In all these cases, people have a strong incentive to look as good as possible. Espeland and Sauder (2016: 4) call these systems 'engines of anxiety' to express the constant 'fear of falling in rank that dominates the consciousness of

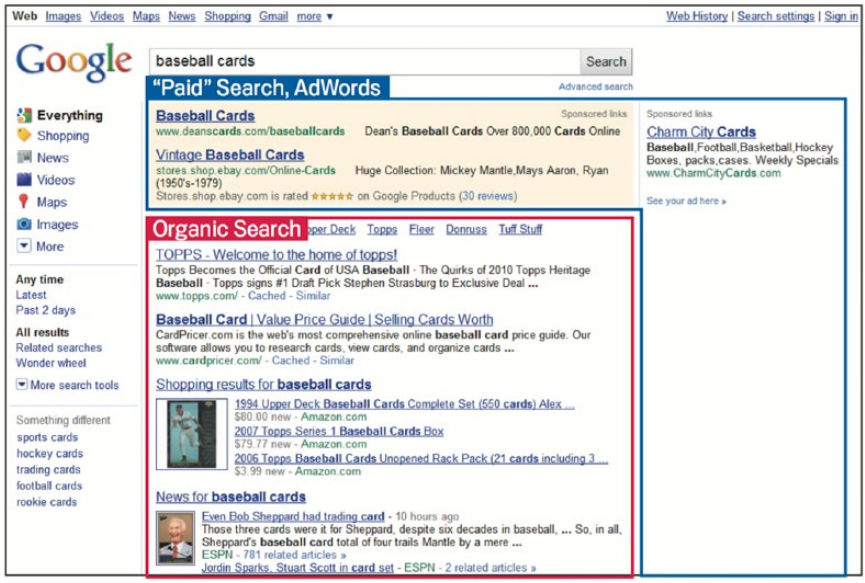

Figure 1. Illustration from Google's (2010: 3) *SEO Starter Guide* that indicates the difference between 'paid' and 'organic' search in an annotated screenshot. While the word 'paid' in 'paid search' is prominently marked with scare quotes, the 'organic' in 'organic search' is held to be self-evident.

those subject to them'. Similarly, Hoskin (1996: 265) writes about the 'awful idea of accountability', which results from turning measures into targets and enrolling data subjects into a self-reinforcing cycle of improvement, creating not 'docile' but 'self-actualized' auditable individuals (Shore and Wright, 2000: 78).

If website owners want to improve their standing in results, they can either pay to have their content featured in 'paid ads' or try to rank 'organically' in the main body of results (Figure 1). The latter strategy, SEO, has been around since the early days of web search in the 1990s. While the exact stratagems and tactics have been changing over time, SEO typically involves monitoring changes in the engine's ranking system and trying to decode the factors that affect them, identifying the most promising keywords for a given web page, revising the page's structure, text and layout for these keywords, and creating content in the hope that other websites link to it and thus improve its relevance. Since this work requires a significant amount of experience and expertise, it is usually carried out by specialists. In fact, an entire industry of mostly self-taught SEO professionals has emerged that offers companies, organizations and individuals to optimize their presence on the web. Like tax advisors, test prep tutors and public relations consultants, these experts have turned the pressure to perform in algorithmic systems into a lucrative profession. By now, the industry has not only a dedicated acronym, but also professional associations, training courses, online platforms, news media and thousands of mostly small to medium-sized agencies. In 2018, SEO services accounted for 22% of digital marketing budgets in the UK – the biggest position overall before social media marketing, display advertising and

pay-per-click advertising (*eMarketer*, 2018). In the USA, the SEO industry reported revenues of up to $65 billion in 2016 (Sullivan, 2016).

For managers and engineers at Google Search, these practices constitute a major problem. If 'paid ads' are the place where data subjects are supposed to buy competitive advantage, then organic listings need to be protected. In fact, keeping search results free from commercial considerations has long been an important goal for the creators of the engine (Brin and Page, 1998: 109). Google's (2010: 14) own *SEO Starter Guide* describes the underlying logic:

> Interesting sites will increase their recognition on their own. Creating compelling and useful content will likely influence your website more than any of the other factors discussed here. Users know good content when they see it and will likely want to direct other users to it. This could be through blog posts, social media services, email, forums, or other means. Organic or word-of-mouth buzz is what helps build your site's reputation with both users and Google, and it rarely comes without quality content.

According to this logic, quality is more or less self-evident, for users 'know good content when they see it'. As long as website owners produce 'interesting sites', 'compelling and useful content' or simply 'quality content', the guide suggests, their websites will be relevant and linked to. In contrast, many of the other operations necessary to produce a search results page, including indexing, ranking and serving web pages, designing the interface, as well as measuring said user experience, are conspicuously absent. Rather, the process is portrayed as being outside the reader's sphere of influence as web pages rank 'on their own'. By calling this a 'buzz', and an 'organic' one at that, the passage turns culture into nature, distinguishing unintended but invited forms of reactivity from uninvited but intended ones.

What is at stake here, then, is not simply the integrity of automatically generated rankings, but a much broader struggle for authority between the managers and engineers who run the platform and the website owners and SEO consultants who depend on it. Most importantly, not *all* reactive practices are considered 'gaming'. On the contrary, website owners are welcome to optimize their presence by creating 'compelling and useful content' for their audiences – a practice that is considered consistent with the search engine's goal of retrieving and promoting relevant and high-quality information. On the Google (2012a) support pages, this ambiguous status of reactive practices is expressed as follows:

> While SEOs can provide clients with valuable services, some unethical SEOs have given the industry a black eye through their overly aggressive marketing efforts and their attempts to manipulate search engine results in unfair ways. Practices that violate our guidelines may result in a negative adjustment of your site's presence in Google, or even the removal of your site from our index.

Rather than declaring any kind of interference categorically wrong, the passage invokes the language of ethics to distinguish between good and bad reactive practices. If reactive practices can qualify as either 'overly aggressive marketing' or 'valuable services', then it is also true that 'no sharp lines distinguish gaming from other strategic behavior'

(Espeland and Sauder, 2007: 29). In other words, the moral status of reactive practices is not given, but needs to be accomplished in practice.

From ethics to ethical work

Before going into further detail about how the distinction between good and bad optimization is being managed in practice, it might be useful briefly to clarify the analytic sensibilities that underlie this study. In contrast to a large body of work in the social, information and computer sciences, the goal of this inquiry is not to come up with a definitive account of gaming or a best way to avoid it. Rather, the goal here is to understand how 'gaming the system' behaviour is not only a problem for ethicists, philosophers and engineers, but also for those who supposedly engage in it (see e.g. Heimer, 2013; Mol, 2013; Neyland, 2016; Pols, 2014; Toennesen, 2009). I aim to understand how people organize themselves *as ethical* in the absence of the ontological security that professional ethicists and some philosophers presume.

Such an inquiry into the practicalities of 'being ethical' can draw on a rich body of existing work in STS and related fields (Fassin, 2014; Jacob, 2019; Lambek, 2010). Studying healthcare practitioners in Dutch hospitals, for example, Pols (2014: 82, emphasis in the original) proposes an approach to ethics as a situated practice that does not place normativity in the world of facts, but aims to analyse 'the different and sometimes conflicting notions of what is good care *within* care practices'. Challenging the field of business ethics, Toennesen's (2009) ethnography of three self-professed 'ethical' companies captures how employees 'ethicize', rendering organizations, practices and products 'ethical' for different audiences. A similar approach has been taken by scholars who study the 'moral economy' of the pharmaceutical industry (Martin, 2006; Rasmussen, 2004; Sismondo, 2015). For example, Martin (2006: 166–167) explores how pharmaceutical company employees reconcile their personal integrity with the negative public opinion of the industry. Similarly, Sismondo (2015: 32) reports on how 'Key Opinion Leaders' (KOLs) – that is, medical experts with influence in their respective fields of practice – struggle to justify their work for and with pharmaceutical companies in other than self-interested terms. In all these cases, people operate in normatively loaded settings, in which they have to justify their actions before themselves and other people.

In an attempt to capture these dynamics, Lynch (2001: 3) proposes an ethnographic strategy he called 'ethigraphy'. Taking his cue from Dear's (2001: 131) idea of epistemography as being 'centrally concerned with developing an empirical understanding of scientific knowledge', Lynch suggests ethigraphy as

> a kind of empirical ethics that examines how technological innovations provide conditions for *ad hoc* pursuit of political and ethical closure. Unlike the promise of classic ethics, the aim is not to repair *ad hoc* decisions with actions grounded in moral principles; instead, it is to investigate the circumscribed and circumstantial way moral agents handle novel conflicts and reconstitute natural and social orders.

This approach to studying ethics *as* and *in* practice, Lynch suggests, allows us to ask important questions about the currency of ethics in particular activities. In the case of

web search engines, for example, the approach would challenge us not to determine a generally 'right' or 'ethical' way to go about optimization, but to ask how, for whom, and under what circumstances optimization becomes a matter of concern.

Of course, it could be argued that understanding ethics as a practical accomplishment is beside the point. After all, does not our concern with ethics spring 'from our desire to say something about the ultimate meaning of life, the absolute good, the absolute valuable' (Wittgenstein, 1965: 11)? Yet the aim of this inquiry is not to denigrate the pursuit of better worlds, indulge in moral relativism or demand 'non-normative description' (Fujimura, 2002: 1). Rather, the goal is to get a better sense of how these very practices of 'being ethical' are implicated in and organize the day-to-day experiences of people. Attending to the *ethical work* of optimization, I suggest, can shed light on how ethical obligations are being established, negotiated and distributed across contemporary measurement technologies like Google Search. The two key questions, then, are these: How does optimization become a matter of *ethical* concern? What does it take to navigate this boundary on a daily basis?

Engineering moral obligations

In theory, the task of distinguishing desirable from undesirable forms of optimization seems to fall primarily to those who run the engine. After all, managers and engineers at Google Search control the platform and its public presentation and thus can penalize and punish website owners almost at will. In practice, however, this control is somewhat limited. While a total crackdown on any form of reactivity would stifle the very activities the engine is supposed to measure, too hands-off an approach would leave the system open to all kinds of interference. In other words, system operators have to strike a careful balance between preventing manipulation and encouraging forms of optimization that serve their own goals. So how do search engine operators turn optimization into a matter of ethical concern?

Perhaps the most obvious resource for governing optimization are the so-called 'Webmaster guidelines', a document of about 1300 words that contains a set of ground rules for optimization practices (Google, 2012b). In addition to 'Design and content guidelines' (e.g. 'Make a site with a clear hierarchy and text links', 'Create a useful, information-rich site, and write pages that clearly and accurately describe your content') and 'Technical guidelines' (e.g. 'Make sure your web server supports the If-Modified-Since HTTP header', 'Test your site to make sure that it appears correctly in different browsers'), the best known part is arguably the 'Quality guidelines' (Google, 2012b).

The 'Quality guidelines' consist of two main sections. The first one, titled 'Basic Principles', features general ideas about the bifurcation of audiences into 'users' and 'search engines', a call to 'avoid tricks' as a heuristic to detect unfair interference, advice against 'link schemes' and 'bad neighborhoods' on the web, and the prescription not to use 'unauthorized computer programs'. The second section, titled 'Specific guidelines', enumerates eight specific practices to avoid, including hidden text or hidden links, cloaking or sneaky redirects, automated queries, pages with irrelevant keywords, duplicate content, badware, doorway pages, and a cautionary note against affiliate programmes. Violation of these guidelines, it is suggested, can be reported through a special link to

Google's web spam team. Once a violation has been established, it might be penalized through ranking penalties or even dropping an entire website from the index – a practice commonly referred to as the 'Google death penalty' (BBC News, 2006). Any of these penalties might be lifted if the repaired pages are submitted for 'reconsideration'.

Although this arrangement has all the makings of a governance regime including rules, enforcement and a mechanism for review, the everyday experience of my interlocutors was not so smooth. While a small number of high-profile cases (including JC Penney's large-scale link scheme) were easily identifiable as 'unethical' or 'black hat', the majority of cases fell somewhere in between the two extremes. First of all, the language of the 'Quality guidelines' leaves ample room for interpretation – a well-studied feature known as the indexicality of language (Bar-Hillel, 1954: 365). In my interviews with search marketing professionals, for instance, it became clear that everybody knew that 'paid links' were prohibited. Yet what exactly counted as 'paid' was a different question. In one case, an SEO professional reported that her agency had a law firm sponsor drinks for students at a reception at a university. In exchange, they only asked the organizers kindly to acknowledge their support by linking back from the announcement on the law department's website. This link from a highly relevant university page, I was told, would be worth much more than a group of thirsty law students could drink. So did this count as a 'paid link', and how would one know the difference? Second, the search engine operators' ability to detect and penalize undesirable forms of optimization at scale was assumed to be severely limited. As SEO professionals explained to me, it was impossible to judge the ethicality of any given link without at least a basic understanding of its context. For example, a human reader could easily tell the difference between a news article linking the words 'debt management' to a page with resources from a consumer protection agency and the same article linking to a page titled 'FAST CASH NOW' offering usurious payday loans. A search engine, in contrast, would have no obvious way to identify the second link as problematic. The software code that marks up the words 'debt management' as a hyperlink does not convey the motivations of its author or recent debates in consumer finance.[6]

From the perspective of data subjects, then, these difficulties make it challenging to distinguish good from bad optimization. The resulting ambiguity creates what Leigh Star (1991: 47) called a high-tension zone, 'a kind of zero point between dichotomies or between great divides: male/female, society/technology, either/or'. Being caught between a great divide, Star suggests, is both a blessing and a curse. On the one hand, ambiguity about the status of an action allows a person to enjoy some freedom as they navigate the zone to their advantage. Optimization professionals, for instance, have turned this gap into a business and engage in a form of arbitrage between the interpretive capacities of human and machines. On the other hand, this ambiguity comes with significant precarity. Since operators have full control over the platform and its databases, optimization professionals tend to be at risk of pushing it too far and thus being penalized with potentially devastating consequences for their clients and themselves. In practice, this leaves SEO consultants with a high-stakes gamble. Under conditions of precarious ambiguity, how can they maximize visibility while minimizing the risk of penalty? How do optimization professionals navigate the shifting boundary between 'ethical' and 'unethical' optimization?

Ethical work at ProSEO

As part of my ethnographic fieldwork with the British SEO industry, I spent three months as an unpaid intern and ethnographer at ProSEO (a pseudonym), a small search marketing agency based in the south of England. On its website, ProSEO described itself as an 'ethical' or 'white hat' company and worked for clients in the travel, education, retail, finance and fancy dress industries. As an intern, I was trained in a variety of standard tasks that came with optimizing other people's websites. Besides occasional client meetings and trips to industry conferences, this mostly meant screen work, team meetings, trainings and discussions in an open-plan office.

At ProSEO, the moral status of optimization practices was a constant topic of concern. There was hardly a day on which the work of 'being ethical' did not become the focus of attention. Over time, it became possible to identify a number of different operations that SEO consultants employed in their continuous struggle to be ethical: the ongoing re-specification of practices as 'good' or 'bad', the use of material artefacts, the telling of moral tales, and recourse to irony and humour.

Re-specifying: 'If it's not spam, I guess it's alright'

A first kind of ethical work took place at discussions in forums such as the weekly team meetings. The following episode, transcribed here in its entirety, features Martin and Andy (all names are pseudonyms), the two directors of the company, as well as three members of the team: Nina, Tom and myself. The conversation started with Martin noticing that a competitor appeared to have made extensive use of blog comments as a way of building links. That is, their consultants had searched for a website or blog that allowed links in their comment sections and then posted a comment with a link to their client's website. In this case, the competitor's website had made extensive use of comments left on the *American Spectator* website.

Tom:	Bastards ((laughs)) spammy comments
Martin:	I have sent you an email and [their website] has got [links from] the *American Spectator*. It's in Alexa of 13,000 so it's a reasonably popular website.[7] Uhm, I don't need to tell everyone how accurate Alexa is, but it's reasonably popular and, you know, PageRank 4 or 5. They have got a comment that just says, you know, 'Great post, and here is our keyword', followed, you know, so that sort of stuff. Is that something we should be taking an effort to do, too …[8]
Andy:	I think it depends how it's done. I think, normally it should be a comment in context, such that we have thought about –
Martin:	Comment …
Andy:	– comment spamming
Martin:	Yeah, um, as long as it's adding to the conversation, I mean that's, that's what Andy said. I mean if everyone is like 'Yeah, okay, let's go for it and it's adding to a conversation' then that's fine.
Andy:	Yeah

Martin: I don't mind that, but certainly never, um … comments that don't add but –
Andy: Not like the ones that we get on our website all the time.
Nina: Yeah, Viagra Viagra Viagra Viagra Viagra…
Andy: They had the same one for about … eight different e-mail addresses, that's –
Nina: Are these the Viagra e-mails?
Martin: Ah, yeah, we get loads of them.
Andy: – those who are operating SEO services.
Nina: Do they wanna tell you something ((laughter))
Martin: I think it's something, because we have never done it before, I think that's something that's worth talking about.
Tom: I guess from Google's point of view it's kind of, these article links aren't natural. But it's just something that everybody does. So it's not considered black hat specifically. It's not paying for something. It is providing unique content for the internet which someone … may … find … interesting as well, but there you go, with this one ((points at screen)) you can see that links are … in this little highlighted area down at the bottom –
Martin: OK, so if it's not spam, I guess it is alright.

As ordinary as this episode might seem, it illustrates a key feature of the work of 'being ethical': the temporary re-specification of practices as 'ethical' or 'not ethical'. What is remarkable here is not so much the outcome of the meeting, but *how* and *under what circumstances* the questionable practice of leaving comments on other people's blogs for the sole purpose of link building comes to be seen as legitimate. In this case, the team cycles through a series of considerations that each articulates a different way of thinking about the ethicality of blog comments. This includes the question of whether it is a 'comment in context, such that we have thought about [it]', whether 'it's adding to the conversation', whether it is 'not always the same one like the Viagra e-mails', whether 'it's just something that everybody does', whether 'it's not considered black hat specifically' although it may not be considered 'natural', whether 'it's not paying for something', and whether 'it is providing unique content for the internet which someone may find interesting as well'. While these considerations alone are unlikely to bring any closure, they nevertheless unsettle what appeared to be a clear-cut case of bad links and thus problematize the ethicality of the practice for it to further be resolved.

In sorting out this problem, the members of the team employ a range of rhetorical devices. One example is what Smith (1978: 39) calls 'contrast structures', that is, situations in which 'a description of … behavior is preceded by a statement which supplies the instructions for how to see that behavior'. Consider, for instance, the part of the exchange in which Andy brings up the Viagra comments on ProSEO's own blog. The repetitive mention of 'Viagra Viagra Viagra Viagra Viagra' establishes what everybody is expected to recognize as a clear case of spam, an ideal type that is further sharpened by placing the comment in the context of ProSEO's own blog, which does not deal in pharmaceuticals. In highlighting the Viagra comments, Nina thus establishes a backdrop against which a comment that is 'adding to the conversation' can be read benevolently in

a way that makes it different from the obvious and extreme case of Viagra spam. In other words, the contrast structure helps enact a distinction between good and bad commenting practice and thus instructs the reader to read the following practice *as* ethical. This play with contrasts is worked out further in the remainder of the conversation: paying for links versus not paying for links, providing unique content versus copying already existing content, thinking about content versus generating it automatically. This strategy is complemented with a reverse device that might be called an 'alignment structure'. For example, when Tom remarks that 'it's just something that everybody does, so it's not considered black hat specifically', the posting of link comments is being aligned with a common practice, which, as a result, cannot be bad.

At the end of the discussion, then, an initially shady practice ('Bastards, spammy comments') had been re-specified as acceptable ('it's alright'). Yet while the meeting allowed the team to achieve at least a temporary resolution, the results were never really final. Already the next day, the two consultants tasked with leaving comments for the client re-encountered many of these issues. Most importantly, they stumbled upon a series of more specific challenges that the group had not anticipated. This included questions such as what names to use when registering as a contributor on the website (The brand name? Their own names? A pseudonym?), how they should formulate a contribution that was likely to be seen as 'useful' (Would a generic encouragement like 'Interesting argument. You really made me think about [topic]!' be persuasive?), and differences between individual comfort levels (What if Tom were fine with doing something Marcus had concerns about?). Whenever problems of this kind arose, the two consultants decided to consult their manager, effectively deferring their decision to 'higher-ups' within the organization. Such communication, then, helped them enact themselves as conscientious employees who check in with their superiors when faced with difficult decisions.

Overall, re-specifying the ethical status of specific practices was a constant challenge at ProSEO. While negotiations like the ones described above allowed the team to settle ethical concerns and go about their work, the resolutions were hardly ever permanent or stable. Rather, they had to constantly be re-specified as ethical or not for the specific situations in which they were brought up. What counted as ethical was thus not settled by applying guidelines to cast normative judgements, but by routinely sorting out specific practices as ethical or not. This work of ongoing re-specification of practices and objects thus constituted an important element of 'being ethical'.

Materializing: Black hat, white hat

Although the team meeting might suggest that ethical work is largely a discursive affair, this was not the case. On the contrary, material objects have long been found to play a crucial role in ordering relations of accountability, including bin bags (Woolgar and Lezaun, 2013: 327) and sharpie pens (Irani et al., 2010: 4). A particularly iconic object at ProSEO was a proverbial black hat. As should be clear by now, the metaphors of black hat/white hat figured prominently in the work of SEO. Thus it did not come as a surprise when Tom decided to order one on Amazon (Figure 2).

Already the selection of an appropriate model raised discussion in the office. Standing around Tom's computer screen, the team were scanning the available models. Besides

Figure 2. A black hat in action.

preferences for certain styles (top hat vs bowler hat), people were wondering what use a black hat could possibly have for an 'ethical' SEO agency, whether it could be written off as a company expense, and whether the hat should be kept in a high-security gun rack to avoid potential abuse. I was not in the office when the hat eventually arrived, but I noticed that it slowly took on an important role in our work, as the following excerpt from my fieldnotes illustrates:

> After lunch. Andy starts fiddling with one of the hats. He picks up the large top hat, taps rhythmically on it with his right hand, turns it around in his hands while looking intensely at his screen. I notice how this catches Mike and Marcus' attention. They look at the hat, then at each other. Then they go 'Oh-oh!' and 'Woo-hoo!' and start giggling. Andy looks up in surprise, looks at Mike and Marcus, and then notices the hat in his hands. He smiles. 'No, I'm not doing anything evil … just holding it in my hands, guys'. Laughter.

While a lot of work at ProSEO was screen work and thus not very communicative, the hat provided the team with a welcome opportunity to articulate the issue of ethicality. As a material object, the hat worked as a highly visible reminder of the moral ambiguities that characterized the work of optimization and rendered otherwise hidden practices ethically relevant. In more than one situation, the hat was used by members to signal an ethical dilemma, for example when someone put the hat on, turned around, and said: 'I have a question.'

Toennesen (2007: 17) proposes the notion of a 'community-building artifact' to capture the role of objects like the black hat in articulating ethics. Using the example of a wormery in the common room of an 'Ethical Property Company', he shows how artefacts can help enact a symbolism, which, in turn, entails material configurations, a set of 'practical arrangements that are used, referred to and highlighted in everyday organizational

discourse, when organizational members contrasted their beliefs and working routines with that of other organizations' (2007: 17–18). However, while Toennesen was primarily interested in the accomplishment of ethical organizations, the case of the black hat suggests that we can attribute an even broader meaning to objects not just as community-building artefacts, but also as devices for problematizing certain practices as ethically relevant. This latter aspect is particularly prominent in the work of Marres (2009: 119), who analyses so-called 'green living experiments', in which people install energy meters in their homes to save and become aware of consumption. Objects like energy meters, Marres (2009: 126–7) suggests, work here as an 'object of dramatization in public'. In this regard, a mundane object such as a black hat can be seen as an important gimmick for articulating ambiguity in the work of 'being ethical'.

Storytelling: 'The guys from Salt Lake City'

A further feature of ethical work at ProSEO concerned the telling of stories, a long-standing theme in STS and related fields (Frank, 2010; Orr, 1996; Winthereik and Verran, 2012). Like Orr (1996) in his ethnographic study of photocopier service technicians, I encountered a number of recurring stories that were told, retold, invoked, subverted and alluded to on a number of occasions. The following excerpt from a training session for a new client from the web hosting industry is a good example. A largely internet-based business with more or less standardized products, web hosting providers encounter a high degree of competition in search results. Not surprisingly, the client was keen on improving their link profile:

Client: So what about buying links … would that be something we could do

Andy: Well, so … the good side about link building is as you build a brand you should build links. And so Google's concept of a link is a proxy for an offline vote of confidence. So it's like somebody talking about it in a pub, it's, uhm, it's like a billboard, you know, a poster on a wall. Uhm, but if we start manipulating that and start forcing it in ways that, uhm, Google thinks are just to manipulate the search engines, then we gonna be in problems. And at the end of the day we can all talk about what Google likes and what Google doesn't like, and there is a huge number of rules. But the truth of the matter is that, uhm, they have some filters that are algorithmic. And then they have a band of people in Salt Lake City, Utah, somewhere down there, who are very … they are not, they are not computer people, particularly, they are very moral, you know, they are, the reason they employ them is because they go to church on Sunday, they go to the mosque on Sunday or wherever they wanna go to, they have a very high moral standing. And their job is to whenever things fall out of the algorithm as suspicious to come along and their job is to have a look and say is this good for the user. Is there any kind of deception here? And it doesn't, and they don't think about is this going to improve the search engine rankings, is there deception. OK. So when it gets to it, it's that person who makes a decision. And we are not allowed to speak to that person. And the Google engineers are not allowed

> to speak to that person. And right at the far end, there is a human being who has a different agenda to make a decision in the end. So if you start out as a good, honest organization, you'll be fine. If you set out as a manipulative organization, one day you'll make it tripped up. Yeah?

As Andy's answer suggests, he was quite strongly opposed to the idea of buying links, a practice generally considered 'unethical'. Given the immense competition in the industry, it may have been tempting to resort to such techniques. But in Andy's view taking the risk was not worth the expected gain.

What is interesting here is how Andy makes the point. First of all, the absence of any specific reference to the 'Webmaster guidelines' is conspicuous. The guidelines may be alluded to as 'a huge number of rules', but they are not further specified or referenced. Instead, they are roughly described as 'what Google likes and what Google doesn't like'. Second, and to my surprise, Andy explains the process of policing on the part of Google by referring to 'a band of people in Salt Lake City', a city that is known to be the headquarters of The Church of Jesus Christ of Latter-day Saints or, colloquially, the Mormon Church. As Andy speculates, these people are employed by Google because 'they go to church on Sunday, they go to the mosque on Sunday or wherever they wanna go to, they have a very high moral standing'. True or not, he portrays them as a moral authority, who make decisions about penalties once websites have been flagged as suspicious or have been reported as potential spam by webmasters. These people, Andy suggests, are the ones to be convinced and the reason why it pays to start out as a 'good, honest organization'.[9]

In my interviews with SEO professionals, stories like the one about the 'human raters' were well known. Some responded to my inquiries about the 'folks in Salt Lake City' with a bored nod and said that 'this has long been known'. Others laughed at my naivety and told me 'not [to] believe everything' I heard. Yet while the truth of the story might have been contested in the industry, this did not hamper its popularity and use in everyday conversations. The more likely reading of this episode is therefore that the story appealed to SEO consultants not because of its accuracy or evidential value but because of its performative capacities. In this case, the story paints a picture of a group of godlike judges who render verdicts that cannot be appealed. These characters, which are invoked again as 'guys from Salt Lake City' at the end of the session, are cast into a version of reality in which the manipulation of results is futile and punished with serious consequences. The story, Andy suggests to me on our way back to the office, can make deceptive tactics less attractive and at the same time build trust in the SEO consultant as an expert.

Ironicizing: 'Why won't sharks attack SEOs?'

A final form of ethical work involves the use of humour and particularly irony. Laughter was a ubiquitous occurrence during my time with ProSEO and the industry at large. The collage in Figure 3 provides a small selection of the many jokes, puns and memes I was told, emailed and shown at various stages of my fieldwork.

Figure 3. Selection of jokes and memes.

Each of these remarks encapsulates a way of parsing complex ethical problems and thus exemplifies the salience and role of humour in the industry.

While irony and humour have long been studied as devices for performing membership (Woolgar and Ashmore, 1988: 10), they appear to be particularly powerful when being used to cope with moral ambiguities. Consider the following situation I recorded at a conference session, where – once again – the panel turned to the topic of spam. Following a discussion about the opportunities of social media for SEO, the moderator was concerned about the increasing amount of spam messages he was receiving not just as an SEO professional, but also as a user of those services.

Moderator:	Linda mentioned social media. I get spammed 50 times a day on Twitter. Seriously, I get spammed on Facebook, I get spammed on –
Audience member:	((shouting)) Sorry!

The scene triggered a gale of laughter and a number of follow-up comments in the audience, including 'I warned you, Mike' and 'Cheeky bastard!'.

It was interesting to see how seemingly contradictory evaluations could coexist in the exchange. On the one hand, the moderator expressed the shared sentiment that spam messages were a time-consuming nuisance and therefore undesirable. On the other hand, the interjection reminded the audience that such strategies were in fact used by many in the room. While it was not clear whether the audience member who shouted 'sorry' was among them, the interjection recalled this realization and even exaggerated it by voicing it in the form of a public apology. The fact that spamming is usually a rather clandestine

activity made the remark even more effective. What was achieved almost in passing in this moment was remarkable: the conflicting realities of spam as both bad (a nuisance to users) and good (a tactic for search marketing) were maintained. Rather than resolving the ambiguity in one way or another by proclaiming a final verdict, both versions were held up despite their obvious incompatibility.[10] Mulkay (1988: 29–30) has called this moment 'bisociation', which he defines as 'the combination of divergent frameworks' to allow for 'the maintenance of an interpretative duality'. Distinguishing a humorous from a serious mode of reasoning, Mulkay (1988: 3–4) suggests that

> in the serious realm we normally employ a unitary mode of discourse which takes for granted the existence of one real world, and within which ambiguity, inconsistency, contradiction and interpretative diversity are potential problems. In contrast, humor depends on the active creation and display of interpretative multiplicity. When people engage in humor, they are obliged to collaborate in the production of a kind of 'controlled nonsense'. They temporarily inhabit not a single, coherent world, but a world in which whatever is said and done necessarily has more than one meaning.

The enactment of 'controlled nonsense', then, may in fact appear nonsensical through the lens of serious discourse. As a humorous phenomenon, however, it opens up the possibility of maintaining moral ambiguity in the face of contradictory demands. The ethicality of optimization is thus enacted not as a problem to be resolved, but as a conflict that defies clear resolution.

Conclusion

As metrics, scores and rankings play an ever more important role in our lives, 'gaming the system' behaviour has become a key concern for policymakers, engineers and academics. Often described as an inevitable evil, gaming tends to be portrayed as a threat to the integrity of systems that is best to be eradicated. Yet as the case of web search engines has shown, the situation is more complicated. For those subject to the system, trying to optimize their own appearance is often the only way to reclaim a degree of agency in a potentially oppressive setting. In fact, such practices are widely used and even tend to be encouraged by the operators of the engine. Against this backdrop, concerns about the prevalence of gaming might be better understood as forms of moral regulation. What counts as 'gaming' is not given in advance, but needs to be established, navigated and negotiated in specific situations. Gaming, then, is not so much about a generalized threat to the integrity of systems, but about the regulation of reactive practices at the margins of contemporary ranking schemes.

Rethinking 'gaming' as a form of moral regulation has a number of important implications. First, shifting our analytic focus to the kind of work expected from those subject to the system can provide us with a more specific understanding of the forms that 'power' takes in public measurement. Contrary to the conventional view that preserving the integrity of systems is primarily a question of making and enforcing clear distinctions between good (white hat) and bad (black hat) reactive practices, the case of ProSEO has shown that the very work of trying to define these categories was pervasive and was

never fully settled. Once the operators of the engine had invoked the language of ethics to distinguish between different forms of reactivity, they had effectively imposed a moral obligation that those measured had to reckon with. In practice, then, this moral obligation was not simply one of having to behave in one way or another, but one of doing so while figuring out the 'right' way of behaving in the face of ambiguity. Partly by design and partly by necessity, this ambiguity was an important feature of the system, an upshot of what might be called a regulatory paradox in automated measurement: the more specific the regulations, the easier they are to circumvent; the more general the regulations, the harder they are to enforce.

In the case of ProSEO, managing this ambiguity took on a number of distinctive forms, including the temporary re-specification of practices and objects as 'spam' or 'not spam', the use of material artefacts like the black hat for problematizing matters of ethical concern, the telling of stories that helped the team to justify their actions vis-a-vis potential clients, and the pervasive use of irony and humour to operationalize the moral double bind. This 'ethical work', as I have called it, took up considerable time and resources, allowing the team to recognizably be 'ethical' and to reconcile conflicting framings of their work as both a blessing (for data subjects) and a curse (for system operators). Of course, this taxing work is not exclusive to the field of algorithmic systems and can be found in many other contexts of performance measurement. The difference is that algorithmic systems like web search engines affect a potentially much larger audience – especially an audience that is not trained to tackle this particular challenge. As data-driven metrics have started to proliferate across all areas of social life from credit scoring and hiring to social media and the criminal justice system, the obligation to 'be ethical' becomes a much more widespread and pervasive problem. So when the operators frame the challenge as one of 'simply' choosing between two ideal types of behaviour, they effectively 'vacate the middle ground'[11] and delegate the burden of compliance to those who are not usually equipped to manage it.[12]

Acknowledging the salience of this burden in the lives of data subjects can help us further understand the peculiar role of optimization industries. As a group of specialized consultants, SEO professionals have to demonstrate their expertise in order to convince potential clients of the value of their services. However, as this article has shown, this knowledge only constitutes one aspect of their work. By hiring an optimization firm, website owners can also pass on at least some of the anxiety and stress that come with trying to perform in schemes of public measurement. In the same way that JC Penney could point the finger of suspicion at their SEO consultants when their 'dirty little secrets' were exposed, website owners can pay to delegate the ethical work of optimization to specialists. This pattern of behaviour is well known in the sociology of work. Hughes (1951: 321), for instance, analyses a series of 'risk-spreading devices' to account for our tendency to outsource morally ambiguous work:

> we actually hire people to make our mistakes for us. The division of labor in society is not merely, as is often suggested, technical. It is also psychological and moral. We delegate certain things to other people not merely because we cannot do them, but be because we do not wish to run the risk of error.

This wish of trying to avoid the 'risk of error' has been found to be particularly relevant in the context of performance measurement. Morales and Lambert (2013: 228), for example, show how business accountants are frequently assigned the 'dirty work' (Hughes, 1956: 4) in organizations, that is, tasks regarded as so shameful and demeaning that other people do not want to be involved in them. Since these accountants do otherwise take pride in their profession, reconciling the conflicting interpretations of their work becomes a major challenge, not unlike the one experienced by the team at ProSEO.[13] What further complicates this pattern is of course that the ability to delegate the ethical work of optimization is not equally distributed. While well-resourced companies can routinely hire SEO consultants, this is not possible for the majority of data subjects. A key challenge will therefore be to further explore issues of inequality and fairness in optimization, reconsidering the problems of (professional) representation and due process.

Finally, concerns like these can raise much broader questions about appropriate forms of political engagement with and within these systems. The challenge here is that if we rethink 'gaming' not as a problem to be solved but as a tension to be managed, the line between 'playing along' and 'acting up' becomes blurred. As a result, the terms that we traditionally use to account for political struggles, such as 'resistance' or 'empowerment', will lose their analytic purchase. On the one hand, attempts to optimize appearances can be celebrated as a form of everyday resistance, a movement from the bottom up to regain some control with the potential to *disrupt* the system. On the other hand, these very practices also tend to *stabilize* the system, allowing operators not only to promote originalist narratives of 'untouched' or 'organic' results but also to channel some of these activities into the lucrative commercial outlet of paid advertising.[14] While some analysts might take this as sufficient reason to dismiss optimization as a form of corporate capture that prevents data subjects from perceiving the true nature of their social or economic situation, others might take a more pragmatic stance and ask what can be done within existing practices. For example, if we take seriously the ethical work of optimization, then how should it be distributed among the different actors? Do we need provisions to support those least equipped to deal with automated rankings? What would a 'public defender' system look like for contemporary data subjects? Asking these and other questions can open up alternative ideas for dealing with the influence of corporate platforms.

In sum, rethinking 'gaming' as a practical accomplishment does not result in the kind of moral relativism and indifference as which it sometimes is portrayed. On the contrary, focusing on the work of 'being ethical' opens up a novel way of looking at the politics of algorithmic systems. Paying close attention to practices that tend to be considered 'marginal' at best and 'manipulative' at worst has enabled us to move beyond the caricatures of scheming data subjects and defensive engineers. In doing so, we can gain a greater appreciation of the often-overlooked and morally ambiguous work of optimization between compliance and resistance in the shadow of these systems. As the community of practitioners and scholars studying fairness, accountability and transparency in algorithmic systems grows, the field can benefit from being more attuned to the lived experience of data subjects and their essential but precarious role in operating them. Rather than reproducing system-centric language and assumptions of designers, marketers and

engineers, we would do well to reconsider the mostly hidden work of 'being ethical' as an integral feature of contemporary measurement technologies.

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Notes

1. This mantra is also known as Goodhart's law, named after Charles Goodhart's (1984) work on economic indicators.
2. While Coleman's trope is useful here, the optimization practices of website owners also differ in important ways from her and Scott's original conception. For example, unlike the majority of website owners, the hackers Coleman (2017) studies tend to be highly skilled and technically savvy experts. It is this difference that provides an opening for optimization industries like SEO. Scott's (1985) work, in contrast, has been framed in terms of class struggles and was empirically developed through fieldwork in a Malaysian village – a setting that is arguably quite different from contemporary algorithmic systems.
3. As the publisher (SAGE) explains:

> Google and Google Scholar are the principal ways in which people will find your article online today. Between them they account for 60% of referral traffic to SAGE Journals Online. The search engine is now the first port of call for researchers and it is of paramount importance your article can be found easily in search engine results.
>
> By taking some simple steps to optimize your article for search engines it will help your work to be discovered, then read, used and cited in others' work. This helps with the ISI Impact Factor of the journal your article is published in and will further raise the visibility of your article.
>
> SAGE already undertakes many measures to ensure SAGE journals are indexed in the all the major search engines. There are over 100 factors that a search engine will look at before deciding how to rank your article in their search results, but the starting point is the content that you write.

4. With a market share of more than 90% in the UK over the past 10 years (StatCounter Global Stats, 2019), Google Search has been the main concern for website owners and consultants. While search engines like Microsoft Bing or Yahoo! Search were occasionally mentioned by my interlocutors, they played a secondary role at best in their day-to-day work.

5. The bulk of the fieldwork took place between 2010 and 2012 and has been updated since.
6. In Hypertext Markup Language (HTML), the standard markup language for creating web pages, the two hyperlinks would appear as follows:
   debt management
   debt management
   Without an understanding of the broader context of the link and pages it connects, it is virtually impossible to judge its ethicality.
7. Alexa Internet (n.d.) is a US-based web traffic analysis company owned by Amazon. Founded in 1996, the service tracks visits to a website via a toolbar installed in individual users' web browsers. The company tracks traffic data to calculate a *Global Rank* that is often used to indicate a website's popularity compared to other websites. Since the method has significant limitations (users must have the toolbar installed to have their web behaviour counted), industry professionals may invoke it but also treat it with a grain of salt.
8. Ellipses indicate pauses; en-dashes, interruptions; and underlining, emphases.
9. According to media reports, Google Search in fact employs a large number of human raters in the area through contractors such as Lionbridge and Leapforce (McGee, 2012). It is not clear, however, why a place like Salt Lake City would be particularly suitable. One practical reason might simply be a relatively large number of stay-at-home workers, who can do the job remotely from their own computers.
10. While the episode took place at a public conference with a considerable audience, similar comments could be found in other and less public settings. Here is one example from ProSEO's offices:

    > Ben is submitting articles to directories [i.e., websites the sole purpose of which is often to host articles with links to the websites of those who submitted them]. Looking at his screen, he says: 'Look, it asks you for your name, and having an actual profession is a required field.' Jon responds: 'Can you say "link spammer"?' Laughter in the office. (Fieldnotes 20100721-2)

11. I am grateful to Aryn Martin for suggesting this phrase and pointing me to the work of Hoeyer et al. (2017: 382), who proposed the notion of 'ethics work' to describe the 'work of producing the flows of health data and biomaterial' that are critical for data sharing in a Danish laboratory for genetics research.
12. This finding resonates with previous scholarship in STS and related fields that has found aberrations, deviance and breaches to be integral parts of social life (Garfinkel, 1967; Jackson, 2014; Johnson, 2018; Visvanathan, 2011).
13. This view of intermediaries as those conducting 'dirty work' might also explain the rather 'shady' reputation that SEO professionals enjoy (Ziewitz, 2017). In public commentaries, SEO consultants have been variously described as 'spammers, evildoers, and opportunists' (Powazek, 2009), '21st century car salesmen' (Shoemaker, 2007) and one of the 'top online marketing jobs to leave you friendless' (Fox News, 2009).
14. Brunton (2012: 30) has called this paradox 'constitutive interference', a form of uninvited participation that both disrupts and stabilizes the technology.

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