

## **Editorial Surveillance and the Management of Visibility in Peer Production**

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This article investigates the scopic regimes of computer-mediated peer production and the possibilities for seeing, knowing, and governing that are entailed in its accomplishment. Examining the case of the online encyclopedia Wikipedia, the analysis takes a closer look at the everyday routines of mutual observation and the tools that authors have crafted to watch over each other through an archive of wiki-based activities. Based on a three-year ethnographic study among English- and German-language contributors, the article interrogates the technologically enabled gaze they direct to collaborative activities as a form of mutual editorial surveillance. Regarding the status of the knowledge circulated in such environments, it characterizes the management of visibility as an exploitation of both operational cognizance and nescience. In conclusion, the reciprocal information gathering by users about their peers invites to redraft, once again, concepts of panopticism commonly employed to describe modern societies of control and discipline.

*Keywords: surveillance, visibility, digital archive, online collaboration, peer production, panopticon, Wikipedia*

In many ways, the media environments we live in are part of an extensive sociotechnological array for observing, monitoring, and controlling people as citizens, consumers, or cooperators. At a time when most walks of life are grounded by relations to media, communication devices and ambitions to produce, store, and cross-link data form crucial components within a modern “surveillant assemblage” (Haggerty & Ericson, 2000, p. 605). To respond to the accompanying shifts in rationalization, classification, and knowledgeability, scholars have made several attempts to account for current forms of surveillance, whose basic principle was described as a “focused, systematic and routine attention to personal details for purpose of influence, management, protection or direction” (Lyon, 2007, p. 14).

Thus, a number of concepts acknowledge the reality of “people watching people” (Wood, 2005, p. 474) that is prevalent in today’s social media. To better understand how surveillance has become

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domesticated in the interpersonal relationships of mediated day-to-day life, an incoherent array of ideas was brought forward that refer to lateral surveillance (Andrejevic, 2005), participatory surveillance (Albrechtslund, 2008), social searching (Lampe, Ellison, & Steinfeld, 2006), or social surveillance (Marwick, 2012). According to Humphreys (2011), such notions focus on mundane techniques of searching, spying, stalking, and creeping fellow users as well as on types of self-surveillance like, for example, the compliance with the monitoring of consumption behavior or the self-tracking of activity patterns. Adopting such vista, these approaches mainly look at interactions on social networking sites and corporate platforms (e.g., Facebook, YouTube, Twitter).

In doing so, they tend to ignore other genuine areas of surveillance, most notably the transformation of accountability and responsibility in the management of volunteer collective action, which has come with the advent of informational peer production (Benkler, 2006). This mode of creative endeavor can be found, for instance, in free software, citizen science programs, crowdsourced mapping, and the wiki-based compilation of facts. It rests on a form of commitment and cooperation that is decentralized and self-selected and that goes along with the increasing salience of nonmarket, knowledge-intensive work. So it relates to but also differs from earlier developments in computer-monitored information generation and workplace control (Ball, 2010; Zuboff, 1988) and connects to more recent transformations of digital labor markets (Scholz, 2016).

Against this background, the study looks at the scopic regimes of computer-mediated volunteer production and how its ways of seeing, knowing, and governing are managed. It assumes that surveillance is not an a priori fact, but rather emerges in social relationships and can be reconstructed through analytical procedures (Green & Zurawski, 2015). The analysis is interested in the actual practices and technologies of surveillance in peer production—it asks what they are for, how they work, on whom they work, and how they are legitimized or challenged. Guided by these sensitizing questions, I examine the users' technologically enabled gaze directed at collaborative activities as a form of editorial surveillance. Regarding the status of the knowledge circulated in such an environment, I look at the management of visibility as the exploitation of both operational cognizance and nescience.

The article builds on a three-year ethnography conducted between 2010 and 2013 among authors of the English- and German-language version of Wikipedia. It encompassed participant observation, conversations, and in-depth interviews as well as an analysis of documents from wikis and related websites, blogs, and social media profiles. Being the "quintessential commons-based peer production project" (Benkler, 2006, p. 287), the online encyclopedia is a role model for a broad range of initiatives that realizes a way of how to set up and manage volunteer creative cooperation.

### **Everyday Surveillance, Power/Knowledge Resources, and Doing Subjects**

Surveillance constitutes an everyday experience and intimate dimension of human relations. It is, as Giddens (1985) notes, "endemic to modern societies" (p. 14). Its pervasiveness, however, is not only the result of growing administrative or commercial efforts to check, record, and analyze a plethora of everyday activities (Staples, 2000). Its increasing significance also comes with the proliferation of a media-based mutual "interveillance" that is happening, according to M. Christensen and Jansson (2015),

in an "ever-more complex entanglement of daily social and personal practice, and technology use" (p. 1479). This "work of watching one another," as Andrejevic (2005, p. 479) describes it, or "peer-to-peer 'coveillance'" (Rainie & Wellman, 2011, p. 236), which is the term Rainie and Wellman have coined, permeates all sorts of social relations. The terms therefore point to what might generally be called an ambient scopic consciousness of others, without necessarily narrowing it down to modes of coercion and control. In this respect, Lyon (2007) reminds us that mutual everyday surveillance starts from the "elementary watching of some by another in order to create an effect of looking after or looking over the latter" (p. 3).

In the routines of watching and judging others that take place in social media, the majority of users are arguably not terribly concerned with challenging or accepting the modes of commercial and administrative observation happening on platforms. Rather, their focus is typically on what fellow users do and see and not on the abstract operations of corporate bodies (Ellison, Heino, & Gibbs, 2006; Liu, 2007). For instance, Hargittai and Marwick (2016) found that discussions among U.S. students revolved around social risks of sharing information, like embarrassment or conflict with family and friends, but did not so much deal with institutional risks from companies and law enforcement. This situation ushers in a reciprocal "surveillant individualism" in which, Ganesh (2016) suggests, "individuals monitor and surveil each other as everyday practice qua individuals rather than as representatives of other organizations" (p. 167).

Besides peering at their peers, social media users are also accustomed to sensing and anticipating the gaze of their fellow group members as well as that of strangers. So they have learned to reflexively monitor themselves by trying to see through the "look" of others, as Sartre (1956, p. 252) already noted. Trottier (2011) explains this as follows: "The potential of being watched by others contextualizes their own surveillance" (para. 16). Put differently, the users change perspective to examine the performance and representation of others and to look at their own activity and image through other people's eyes. Hence, being seen is not a passive behavior, but affects the observed persons insofar as they perceive their activities as the subject of other people's gaze. This again informs the genesis and appreciation of the kinds of interactions and types of self-presentation that are deemed appropriate in a certain sociotechnological constellation.

Notwithstanding the two-way character of social surveillance, Marwick (2012) clarifies that it also incorporates "power differentials inherent in individual relationships" (p. 383). If we thus follow Foucault's (1977) somewhat metaphorical advice to trace the "micro-physics of power" (p. 28), we are invited to treat power as emerging in the interplay of actors that have the ability to surveil each other and hence to produce and to consume surveillance (Fuchs, 2011). This does not mean that power is equally shared, because situations of peer monitoring come with differing capacities to engage with surveillance, comply with it, or withstand it. In these vision-based relationships, the cardinal power resource is knowledge, that is, usable information about people and interpersonal ties as well as the technologies and skills to collect, store, and exploit this information. More precisely, Mann (2005) holds that to engage in surveillance, people must be able to control the "capture, processing, storage, recall, and transmission of sensory information" (p. 636).

In effect, the reciprocity of vision is never perfect, but is limited by people's access to information resources and the devices necessary to accumulate and process them. It is in this regard that the everyday practices of mutual watching were profoundly transformed by social media and data analytics, as they have made available a range of tools for acquiring and accumulating information on a daily basis. In this way, they continue the transformation of mediated visibility and amplify it. This often involves, Thompson (2005) explained, an extension of the field of vision. In such settings, the visual is therefore not an isolated sensory dimension; it is accompanied, if not superseded, by numerical evidence encapsulated in database archives, available in digital form, and made replicable, searchable, and scalable (Lyon, 2002). However, this expanding arena for seeing and knowing not only liberates people from the spatial and temporal limitations of copresent and situated intervisibility. With its multiplying sorts of information and analytical procedures, it can also enhance the asymmetries of what can be seen and known by whom and about whom.

In terms of how individuals feature in surveillance, the move from a kind of observation based on sight and visual cues to one based on data has commonly been associated with abstraction and decontextualization. Hence, people are meant to be profiled based on fragments of personal information as a "series of discrete signifying flows" (Haggerty & Ericson, 2000, p. 612). Yet for all the virtual presence of such reassembled "dividuals" (Deleuze, 1992, p. 5), these likenesses still refer to physical bodies and personal identities, though not via direct representation, but by categorizing, modeling, and projecting. So the technical surveillance of data or, as Clark (1988) puts it, "dataveillance" (p. 499), consequently operates via searchable databases that connect to "the persons to whom those data refer" (Lyon, 2007, p. 4). The validity and impact of a "data double" rests with its bonds to a presumably real subject about whom data are collected and computed.

More fundamentally, the tendency to objectify the subjects of surveillance is not limited to digital media technologies and analytics. Instead, as Brighenti (2007) observes, surveillant apparatuses and practices always disturb well-ordered ontologies that create a clear separation between the realms of nature and culture. They involve, he points out, the objectification of subjects as happens in voyeurism and, in turn, the subjectification of objects, for example when they are turned into fetishized items. These issues of contextuality and embodiment are complicated by social surveillance, because it seems to operate on the less abstract level of personal intervisibility. Here, users look at each other. The act of watching does not originate from a central organization and is not directed at dispersed people, but takes place between individuals who are active participants involved in veillant systems. Yet people engaged in social surveillance do not usually look at each other directly, but engage in communications that are channeled and controlled by intermediaries. So their gaze is typically mediated through messages, images, and status updates that are coproduced by fellow users and networked systems that do not convey a complete picture or the fullness of a personality.

Rather, this kind of observation, Ruppert, Law, and Savage (2013) argue, operates such that "instead of tracking a subject that is reflexive and self-eliciting, they track the doing subject" (p. 35) who leaves trails and traces when carrying out activities. Consequently, social media users are confronted with algorithmically constructed accounts of their and others' performances. In contrast to views circulated in more traditional surveillance, these representations do not mainly consist of eyewitness reports or

photographs; instead, what is produced stands for combined sets of data in a range of formats, from visualizations and images to numerical evidence. When observing such processed information, users are left to question their overall veracity ("Did they really say that?") and the completeness of the available material ("Was that all they said?") as well as the potential agendas of fellow users, service providers, or third parties that might be regulating the presumably intentional selection ("Why do I get to see [only] this?"). Hence, their scopical involvement can go from purposive supervision ("Where/how do I get to see this?") to inadvertent notification ("Why do I need to see this?") like accidental discoveries ("What do I get to see here?"), friend suggestions ("You have to see this!"), system notes ("You will be interested to see this"), indifferent browsing ("I might have seen this"), or intense search ("I need to see this!").

### **Facilitating Editorial Surveillance**

Most if not all activities of Wikipedia authors are recorded, archived, and made available for subsequent checks. "There is a Panopticon-like record of everyone's actions," Jemielniak (2014, p. 85) notes. This basic functionality features in the majority of projects running on a customized MediaWiki application, despite the fact that there is not one Wikipedia version, but rather an incongruous family of more than 280 language editions. These are not isomorphic, but have created quite distinct institutional settings and cultures of cooperation and conflict (see contributions in Fichman & Hara, 2014). The Wikipedias are furthermore joined by a range of language-specific sister projects like Wikispecies, a database for taxonomy, or Wikisource, a collection of open content texts. They are operated by the host organization, the Wikimedia Foundation (WMF), based in San Francisco, California, as well as by local chapters.

The connate endeavors are neither static nor set for continuous growth. Rather, while the population of Wikipedia editors rose steeply in the first years, numbers have been stagnating since 2008. Hence, my ethnography between 2010 and 2013 covers a time of increasing popularity around the project's 10th anniversary but also a phase of transition. Its explanation of how volunteers come to be able to produce an information resource centered on the situated editorial work performed by active users on a usually taken-for-granted basis (Pentzold, 2011). So it focused on the pervasive dimension of project routines that maintain but also transform the collective's procedures and social institutions. It argued that Wikipedia is achieved through the habitualization of sociomaterial practices upheld by enduring Wikipedians. Along their ongoing participation they commit themselves to common goals, (self-)govern their engagement, and watch and sanction those who fail to do so. In accomplishing the tasks of content creation and administration, this relatively small set of enthusiasts supervise, review, and integrate the piecemeal contributions. They shape the culture of Wikipedia, which has brought about an exemplary collaborative potential.

Yet this predominance of a small portion of high-end editors also seems to have fostered a systemic bias in the topic coverage and a gender imbalance with a low female participation rate. Over the years, editing was restricted for nonregistered users, policies were expanded to safeguard the integrity of the resource, and a considerable portion of duties were delegated to software programs, that is, bots and computer-assisted editing tools (Geiger, 2014; Lund, 2017). This transformation in the "politics of openness" (Tkacz, 2015) meant that Wikipedia has changed from "the encyclopedia that anyone can

edit” to ‘the encyclopedia that anyone who understands the norms, socializes himself, dodges the impersonal wall of semiautomated rejection . . . can edit’,” Halfaker, Geiger, Morgan, and Riedl (2013, p. 18) conclude.

In principle, Wikipedia’s editorial processes allow all interested users to change the encyclopedia’s content and to get involved in the community’s interactions. Notwithstanding some notable limitations like the protection of pages or the banning of notorious troublemakers that were installed over the course of time, this openness (still) enables volunteers to participate in the project without a prior assessment of their skills and agendas. Instead of testing their attitudes or competences before they are active, the software is programmed to allow users to become participants first and to observe and evaluate them during their activity. The moral imperative of equal access might, however, not only be understood as a general “gesture of trust” (de Laat, 2015, p. 18). On the contrary, for Wikipedians, the project’s openness also leads to vulnerability. They are concerned with their inability to anticipate misconduct, which would justify the implementation of surveillance measures that in turn would be, however, indicative of a lack of trust. In this regard, Strathern (2000) notices that “people want to know how to trust one another, to make their trust visible, while (knowing that) the very desire to do so points to the absence of trust” (p. 310). So the editors employ the archived evidence of project engagement to compensate for a lack of visual cues and upfront credentials and identification. Their capability to mutually observe each other through aggregate data acts as a bulwark against the problem of largely unconstrained admission, with a technology-assisted editorial surveillance that is based on filters, lists, and inspections.

Wikipedia’s almost complete record of actions allows the use of tools that disclose portions of overall activities and, if needs be, facilitate quick action (Halfaker et al., 2013). So to administer Wikipedia as an “encyclopedia and a community” (Reagle, 2010, p. 1), the contributors use different elements of the MediaWiki software. The most common feature deployed by Wikipedians to surveil each other are so-called watchlists. By default, watchlists offer an automatically created overview of edits done on pages to which a user has already contributed. Their core function is to give update information about subsequent changes (see Figure 1).

**19 January 2016**

- (diff | hist) . Occupation of the Malheur National Wildlife Refuge; 13:06 . . (+1,814) . . 207.87.48.10 (talk) (*→Origins of dispute: added history of area before ranchers arrived and their first arrival, interaction with Paiute tribe*) (Tag: Possible vandalism) [rollback]
- (diff | hist) . Talk:Occupation of the Malheur National Wildlife Refuge; 12:57 . . (-3) . . Leitmotiv (talk | contribs) (*Undid revision 700655637 by Prostetnic Vagon Jeltz (talk) I'm not responding to that message. I may have my response in the wrong area*) [rollback]
- (diff | hist) . User talk:MB298; 10:03 . . (+609) . . Mkdw (talk | contribs) (*Notification: listing at redirects for discussion of Korean eyes. (TW)*) [rollback]
- (diff | hist) . Korean eyes; 10:03 . . (+344) . . Mkdw (talk | contribs) (*Listed for discussion at Wikipedia:Redirects for discussion/Log/2016 January 19#Korean eyes. (TW)*) [rollback]
- (diff | hist) . m Bob (name); 08:27 . . (-6) . . Vipinhari (talk | contribs) (*Reverted edits by 174.79.185.229 (talk): Editing tests (HG) (3.1.18)*) [rollback]
- (Deletion log); 01:23 . . Stifle (talk | contribs) deleted page *Talk:Korean eyes* (G8: Page dependent on a deleted or nonexistent page)

**18 January 2016**

- (diff | hist) . Ammon Bundy; 22:22 . . (+124) . . CaseyPenk (talk | contribs) (*his profession*) [rollback]
- (Page curation log); 20:25 . . SwisterTwister (talk | contribs) marked Cliven Bundy as reviewed
- (Deletion log); 16:42 . . Shirt58 (talk | contribs) deleted page *Talk:Tina bell* (G8: Page dependent on a deleted or nonexistent page (CSDH))
- (Deletion log); 10:53 . . Sphilbrick (talk | contribs) deleted page *Korean eyes* (G4: Recreation of a page that was deleted per a deletion discussion, Wikipedia:Articles for deletion/Evolution of folded eyelids)
- (diff | hist) . Missouri School for the Deaf; 05:38 . . (+91) . . Deor (talk | contribs) (*adding {{coord}}, ext link*) [rollback]
- (Deletion log); 03:38 . . RHaworth (talk | contribs) deleted page *Until the day I die (film)* (A3: Article has no meaningful, substantive content)
- (diff | hist) . Andrew Jackson Faulk; 03:19 . . (+2) . . Colonies Chris (talk | contribs) (*→Early life: sp*) [rollback]

**17 January 2016**

- (diff | hist) . m List of mayors of Portland, Oregon; 22:39 . . (+5) . . DerFussi (talk | contribs) (*((GR) File renamed: File: Bud Clark.jpg → File: Bud Clark 1988.jpg File renaming criterion #1: Wunsch oder Zustimmung des Hochladenden! now feel that the name is too vague and should include the year in...)*) [rollback]
- (diff | hist) . D Robert Gray (American politician) (Q21064603); 19:20 . . MB298 (talk | contribs) (*This page has been unlinked from Wikidata item. Language links removed.*)
- (diff | hist) . D Robert Gray (Mississippi) (Q21064603); 19:20 . . MB298 (talk | contribs) (*A Wikidata item has been linked to this page.*)
- (Deletion log); 19:11 . . Anna Frodesiak (talk | contribs) deleted page *Gopluglife* (A7: Article about an eligible subject, which does not credibly indicate the importance or significance of the subject)
- (Deletion log) b; 16:58 . . AnomieBOT III (talk | contribs) deleted page *Cantor Wally Schachet-Briskin* (G8: Broken redirect to *Wally Schachet-Briskin*. If this bot is malfunctioning, please report it at *User:AnomieBOT III/shutoff/BrokenRedirect/Deleter*)

**16 January 2016**

- (diff | hist) . N File talk:Benny Benson.jpg; 12:42 . . (+22) . . RadioKAOS (talk | contribs) (*Assessing for WP:ALASKA*)
- (diff | hist) . D Wikipedia:WikiProject Oregon (Q21830561); 09:02 . . MB298 (talk | contribs) (*Language link added: commonswiki:Category:WikiProject Oregon*)
- (diff | hist) . Talk:Mike Huckabee presidential campaign; 07:23 . . (+110) . . Davey2010 (talk | contribs) (*Wikipedia:Articles for deletion/Mike Huckabee presidential campaign closed as keep*) [rollback]
- (diff | hist) . Wikipedia:Articles for deletion/Mike Huckabee presidential campaign; 07:23 . . (+1,645) . . Davey2010 (talk | contribs) (*Closing debate, result was keep (non-admin closure)*) [rollback]

**Figure 1. Example of a watchlist on the English Wikipedia. Source: By MB298, own work, CC BY-SA 3.0. <https://commons.wikimedia.org/w/index.php?curid=46493235>.**

Together with the “recent changes” site, which operates as a news service and chronologically itemizes all incoming edits, watchlists allow editors to observe selective parts of the project and to focus on individual participants as well as user groups. They play a vital role in combatting problematic edits. For instance, Viégas, Wattenberg, and Dave (2004) found that watchlists “provide a mechanism for community surveillance, and may be responsible for the extremely rapid response to vandalism” (p. 581). These formatted synopses have become integrated into editorial routines and act as a convenient juncture in the editors’ daily work, which allows them to channel information and organize tasks. For example, Christopher and Constance, two of the Wikipedians interviewed during the study, consistently referred to their respective watchlists. They provided them with an overview of completed edits and formed the basis for their future engagement if they decided to resume working on the indexed sites or pursued the editors in question.

When I'm not traveling, I log into Wikipedia several times a day. I click on my watchlist, then on the main page, the community portal, also on the reference desk which has, at times, a great entertainment value, and then I look at the new articles. (Constance, Interview VII, lines 106–111)

Well, I work about one to two hours a day. Used to be more. First I check my Wikipedia watchlist in case there's anything new. There, I have pages that interest me, to which I contributed or which I created. These are pages for project maintenance and talk pages as well as articles in which I'm interested. There I simply check what has been changed and look at the changes made. If necessary, I write something to it or change again or something like that. . . . For instance, there are some old user talk pages on it, which almost never change. Therefore, the number of pages currently on my watchlist, three thousand five hundred, is, for sure, far too high. Realistically, there are fifty to one hundred articles and fifty to one hundred maintenance pages which I observe. (Christopher, Interview II, lines 451–460 and 470–476)

Because individual watchlists tend to become extensive accumulations of notifications that prompt evermore intense engagement, Wikipedians are keen to amend their scope in accordance with areas of concern so as to filter in or filter out the pages that they judge to be more or less relevant for them. In this regard, users are warned, somewhat whimsically, not to succumb to "watchlistitis"; although watchlists are quite efficient interfaces to see what changes have been made to articles editors care about, having too many pages on screen can lead to information overload. "As a result," a user manual cautions, warning against the risk of losing track of critical incidents, "you may quickly scan it over, ignoring all but the most significant changes" ("Wikipedia: Don't overload your watchlist!," 2016).

In addition to exploiting the basic features of MediaWiki for editorial surveillance, technology-savvy users have also crafted a register of auxiliary computational devices, mainly to detect and revert contributions that are categorized as vandalizing the encyclopedia's substance (Geiger & Ribes, 2010). Authors who are concerned with repairing content damage can choose between a palette of tools that are intended to make their participation more efficient in terms of spotting, sorting, and counteracting edits deemed problematic. Reflecting on the effectiveness of human action vis-à-vis technological levers, Frank explains why he became involved in developing such tools:

Because packs of data and the like interest me. And because you have the feeling, you can have a better effect. So if you want to write a single article, as for my part, you have to write 100,000 or 100 kilobytes or something like that in order to create an excellent one. And thus I'd rather write 1 kilobyte or 3 kilobytes but have a program that can do many things automatically or can reduce the error rate by finding certain things which are incoherent or something like that. (Frank, Interview VI, lines 383–391)

The "force multipliers" (Halfaker & Riedl, 2012, p. 80) these authors use consist of semiautomatic observation and support interfaces like Huggle or WikiPatroller, which parse contributions, identify certain kinds of malicious edits, and help to filter the feed of incoming changes for suspicious occurrences. They



also include automatic bots that scan the platform's performance and carry out repetitive tasks. These tools support the joint actions of humans and computers, who, as Niederer and van Dijck (2010) explain, intermingle in a "gradually evolving sociotechnological system that carefully orchestrates all kinds of human and non-human contributors" (p. 1373).

However, the scopic instruments only allow people to monitor selected parts of the project and do not offer a comprehensive overview. Rather than observing the entire platform, the computational equipment narrows the users' view on, for example, certain types of edits, like contributions made with mobile devices; particular classes of entries, like featured articles; or specific cohorts, such as newbies and anonymous contributors who work under an Internet Protocol address. In effect, assisted editing based on profiling and classification helps authors to slice and sort Wikipedia's complex environment into personalized fields of vision, from which a subset of units becomes observable, but not the total array. The two ends of such "truncated cones" (Brighenti, 2007, p. 326) come with a separation of groups, relational distinctions, and qualifications of encyclopedic value and appropriateness. So while it is not surprising to find that the tools for monitoring the project normally lie in the hands of privileged users like administrators, who are trusted to care for the interest of the overall community, de Laat (2015) observes more troubling consequences for the users these administrators observe.

Hence, in a somewhat ironic twist on the institutional principle of openness, the influx of new edits requires rapid review and, when contributions are considered disruptive, a swift response is needed. Faced with these day-to-day problems and equipped with only limited resources of time and attention, the participants usually resort to rules of thumb and experience-based assessments. Because anonymous edits often come with vandalism, they note unregistered users with increased suspicion (Jemielniak, 2014). Such users' edits are specifically marked by patrolling programs that equate anonymity with destructive behavior and stigmatize an entire faction of authors, despite contradictory evidence showing that valuable contributions also come from anonymous editors (Anthony, Smith, & Williamson, 2009).

Again, this is not to say that profiling practices inevitably result in a tightly woven surveillance regime, as there is no ultimate instance or central monitoring body that can bring together all viewpoints. Instead, the patchy assemblage of peer scrutinization is put to work by a polycentric collective of actors with different agendas who choose to appropriate certain tools, embed them in their particular routines, and observe a finite corner of the overall encyclopedic enterprise. In spite of the ambitions within the project toward an increasingly stratified hierarchy of participants, the activists take the liberty to employ the monitoring devices on their own terms and do not want to delegate their authority to the managers of the professional WMF (Tkacz, 2015). So Wikipedians believe that they have the right and the responsibility to watch over each other to maintain the integrity of their collective, reinforce project values, and protect the encyclopedia from damage. In the best case scenario, their mutual surveillance should stimulate and ensure a culture of cooperation in which its members can work to their full creative potential. Unsurprisingly, the volunteer contributors also use their "right to look," as Mirzoeff (2011, p. 473) named it, to closely scrutinize the upper echelons of Wikipedia governance, namely, the administrators and stewards as well as paid officers—assuming their activities are viewable (Morell, 2011). Hence, there is no clear separation of opaque technologies and secret decisions on the one hand and opposition or resistance

on the other. Instead Wikipedians experience multiple intersecting gazes and become involved in the daily exercise of peer surveillance themselves (cf. Thompson, 2005, p. 40).

### **(Un)Exploiting Archival Information**

The Wikipedia archive facilitates mutual monitoring for the project's sake. Therefore, the pervasive documentation that is facilitated by the MediaWiki software should not primarily be used for personal user curiosity, but as a means to observe platform-based activities. It allows Wikipedians to inspect some editorial activities and link them to responsible users. In line with this focus on productive goals rather than private animosities, Thomas stated that his core reason for assessing co-editors was not to maintain "personal" rapport, but to sustain a "working environment."

Well, I'd say, there are in principle only few users, where I'd say, that it perfectly makes sense, that I trust the things he [*sic*] does. There are just some users, where I know, they act rather cursorily, who are rather active in the thematic periphery, where I just have to look more closely. I'd say, this simply is a learning process. It is nothing personal, but more like in a working environment where you would do it the same way, where you know that this person is doing qualitatively high-class work or where you have to look a bit more closely. (Thomas, Interview V, lines 127–135)

From this point of view, the collectively mobilized surveillance is an attempt to ensure predictable and high-quality workplace behavior; it is not merely a remedy for Wikipedia's ills, but devised and legitimized as a way to encourage the authors to be productive and vigilant colleagues. So the automatically generated archive resonates with professional routines of documentation as it is used for purposive activities to foster awareness and cooperation among authors (Garfinkel, 1967).

In these terms, the logged archives are a kind of "technologies of accountability," to use a phrase from Suchman, Blomberg, and Trigg (2002, p. 165). As such, they provide the necessary reference points for promoting good contributors, for dismissing bad users and, more basically, for defining what deviant or exemplary activities actually are. The registers of edits hence become the evidence to assess user performance and to rate individual editors according to their efforts. So instead of scrutinizing the abilities and interests of users before their entry into the project, authors refer to the records of contributions to qualify their appropriateness and, based on that, rate the productivity of contributors.

Admittedly, most of the writers operate pseudonymously and do not know each other by civic name. Yet when they refer to the editorial archives they relate to a group of fellow activists, a group that does not simply diffuse into an unrecognizable and unaccountable collective. On the contrary, some Wikipedians are well versed to connect the digits of Internet Protocol addresses to individual editors; this allows them to track, for example, so-called sock puppetry, where a human user orchestrates several accounts and mobilizes a league of like-minded editors by pulling their strings in campaigns for or against editorial matters.

Going beyond a focus on discrete moments of participation or acts of individual users, the scopic tools help authors to assemble and visualize larger amounts of information about editing behaviors, the development of the user base, or the topical structure of the article collection ("Toolserver," 2016). The project and the product hence take shape through visual representations of quantified data that are obtained from documented activities. By drawing on those accounts, the users are able to modulate the scale of their editorial surveillance in order to monitor differently broad sets of edits, contributors, or pages and to survey particular sections of editorial practices, fields of articles, or groups of authors. In the expanding and diversifying project, these flexible views allow them to get an increasingly extensive but also increasingly superficial picture of the status and the dynamics of their collective endeavor.

To this end, the aggregate information is exploited in a number of ways. As for participation, it is used to calculate numbers of visitors, numbers of authors, networks of joint editorship, and trajectories of user engagement. The articles can be charted in terms of size, growth, categorical or linguistic structure, quality, and volatility. Combining these two, the quantifiable archives are employed to retrospectively compare the interaction between users and edits and to predict future project scenarios. The classification and comparison of such characteristics necessitates, Espeland and Sauder (2007) more broadly argue, their commensuration, that is, "the transformation of qualities into quantities that share a metric" (p. 16). The usage of numeric indicators to range articles and authors is therefore based, on the one hand, on matching categorizations with criteria for comparison and, on the other hand, on normalizing the characteristics at issue (Star & Bowker, 1999). These operations make it possible to bring together different aspects of the project and to establish rankings among them, for instance, regarding the most active editor, the longest entry, or the most read article. Such orders are then mobilized to determine what should be considered "normal" and thus to provide a basis for assessing users and content.

These abstractions, however, have provoked backlashes from volunteers, who criticize the translation of project dynamics and user relations into numeric data. At present, most of these activists do not question the use of shared metrics altogether, but produce alternative measures and comparisons. By doing this, they add to the supply of information and adjacent evaluations and render it increasingly difficult to determine what a proper source of information or accurate analysis is. So in using archival information, Wikipedians get a broader picture of their enterprise, not by merging perspectives, but by multiplying them. Thus, due to the complexity of the data and the heterogeneous viewpoints that come from examining these data, contributors find themselves in perpetual debates about what should count as appropriate representations and what conclusions should be drawn from them. As Sewell and Barker (2006) diagnosed for team workers, in these negotiations the editors have, "trouble 'knowing' surveillance unambiguously" (p. 953). Whereas editorial surveillance allows them to take care of the project and to recognize and value the work done for it, it can also turn into an instrument of control that enforces mutual obligations. So, on the one hand, the activists appropriate disclosure devices and embed monitoring practices into their routines, while on the other hand, they can also experience intense interpersonal scrutiny and pressure.

A way for them to deal with these ambiguous sorts of knowledge is to move away from attempts to get a total view via Wikipedia's digital archives and to adopt social nescience as a counterbalance to technological cognizance. Hence, while the machine collection and preservation of information is close to

complete, it has become a genuine skill of Wikipedians not to gather ever more insights, but to discard data in order to focus on relevant information only. One reason for this is the need to be selective that comes with abundance: almost boundless data overwhelm the users' ability to pay attention and to make sense of them (Stohl, Stohl, & Leonardi, 2016). "The scope of paramanagerial control is limited," Jemielniak (2014) thus concedes, "since administrators rarely exert their supervision" (pp. 86–87). The excessive supply of information inadvertently renders it meaningless and necessitates a form of erasure. As Connerton (2008) holds, it demands an expertise that resides "less and less in knowing how to gather information and more and more in knowing how to discard information" (p. 66).

Another reason for not using the full gamut of information comes from the users' interest in promoting productive interaction. In this respect, the authors have formulated etiquettes and guidelines for avoiding the omnipresent archives that document successful cooperation but also controversies and wrongdoings. Wikipedians urge each other to "forgive and forget": "You decide to forgive people for their perceived slights. Everyone else apologizes, and the incident fades into nonexistence" ("Wikipedia: Forgive and Forget," 2016). In line with such admonishments, the activists have formulated an array of cognate normative mottoes like "Get over it," "Let go," or "Drop the stick and back slowly away from the horse carcass," which ultimately ask users to be oblivious for the sake of social peace—although there is a full record of all incidents. So the watchlists and the associated tools are essential, not so much for retaining, but for digesting the plethora of information. Their "modes of observation" (Ruppert et al., 2013, p. 35) help the users to sort the automatically logged data, which contain a permanent backup of past mistakes and irksome controversies that might potentially lead to a disruptive escalation of looming conflicts and counterproductive brawling.

### **Governing (Through) Visibility and Transparency in Peer Production**

When explaining how to support volunteer labor, several scholars have pointed to design levers that allow larger tasks to be divided into modules which can be executed in cumulative and incremental procedures. Here, the granular subelements are freely chosen and executed by individual users who, following their interests, dedicate excess capacity to a joint enterprise (e.g., Flanagin, Stohl, & Bimber, 2006; Hill & Monroy-Hernández, 2013). Where communal spirit fails, a set of adjuvant circumstances has been identified, like shared social norms of cooperation, solidarity, reciprocity, interpersonal trust, charismatic leadership and meritocratic hierarchies as well as a mix of intrinsic and extrinsic incentives (see Kraut & Resnick, 2011, for more on this point).

Although these conditions are crucial for explaining how peer production can be made successful, they fail to grasp the dynamics underlying the shaping and curating of visibility. Thus, they tend to overlook the relational character of vision as a basic condition of sociality per se. In terms of organized cooperation, they also ignore the struggle of participants to activate selective kinds of vision as a means of control (cf. Brighenti, 2007, p. 327). So most explanations miss the fact that the governance of peer production essentially relies on the ability to contain visibilities that are deployed for monitoring, tracing, and tracking the performance of participants. Indeed, acknowledging the effort that goes into creating and legitimizing settings for observation casts new light on the governance of peer production through the management of visibilities (Rose, 1999). It engenders a constellation of users watching their colleagues,

which prefigures other features meant to stimulate contributions, encourage commitment, and regulate activity.

In an environment that rests on editorial surveillance, it would be too simplistic to portray its scopic setup as a dichotomy of supervision and exposure. This would not reflect the intricate interdependencies of vision that make “people, objects, and processes knowable and governable” (Flyverbom, 2016, p. 110). Following Stohl et al.’s (2016) argument, the management of visibility occurs on three dimensions. First, it addresses the availability of information, which is based on the inscription of action into data format and its disclosure by way of visual, verbal, or numerical representations. In Wikipedia, this happens through the configuration of the MediaWiki software and additional tools that accrue, keep, and process information about the changes executed via the platform and make it available to the users again. Second, it is based on approval, which can take the forms of legal obligations, norms, or social consciousness, which is mobilized to permit, demand, or forbid the dissemination of information. In this respect, the most notable feature of Wikipedia’s regulatory sphere is the promotion of a Creative Commons License (CC-BY-SA 3.0) that applies to the encyclopedic content and to the interactional data and thus to both propositional and operational knowledge. It also translates into norms of transparency that demand the users to negotiate their opinions and execute decisions in public on the MediaWiki platform.

Third, visibility as an empirical phenomenon is controlled by access to information for those who wish to see it. This accessibility is, Stohl and her colleagues (2016) argue, not only a matter of technological settings, but is rather based on a knowledge of what sort of information actually exists or can be accessed. It also involves classification schemes that help people to decide what information is uninteresting, conspicuous, valuable, correct, or perhaps flawed. Moreover, access depends on mechanical skills and interpretative competences needed to handle disclosure devices and to make sense of what is to be seen. Given the complexity of these requirements, which exceed those needed to undertake a basic edit, users who want to become a fully involved Wikipedian need to undergo a period of training and socialization, in which they learn where to find particular kinds of data and how to employ the system of categories to organize the content and editorial activities. In addition, they become accustomed to the conventions governing how to understand and evaluate information.

In sum, visibility is a matter of interpretation and sense making that ties in with issues of selectivity and directionality—that is, of who can observe whom and which activities are opened up or kept closed (L. T. Christensen & Cheney, 2015). The calibration of the availability, approval, and accessibility of information strongly influences the chances for volunteer peer production. Consequently, those who stress the egalitarian impetus of commons projects like Wikipedia emphasize the need to install fair scopic conditions as this shall help to generate responsibility and self-organization (Helfrich, 2015; Meretz, 2012; Siefkes, 2012). In light of the actual practices of managing visibility among the authors, it is interesting to see how such demands are neither completely rejected nor fully achieved. The claims for free exchange and a maximum of transparency among the users undergird editorial surveillance and are mobilized to advocate or criticize modulations in supervision and exposure. Yet in practice visibility is always fractured not only due to design and policy decisions but also due to the inability of users to attend to all potential information. So while the common project might potential be in full sight, only sections of the collective

endeavor come into view through dynamically changing “truncated cones,” as Brighenti says, that make it difficult to form a general feeling of commonality among the participants.

### Conclusion

Wikipedia provides a terrain to interrogate the scopic regimes of peer production. In a study of the online encyclopedia, this article develops its case by looking at the technical devices and patterns of action that editors use to observe parts of the total set of recorded edits. It follows the authors’ strategies of monitoring and watching over each other based on the archive of wiki-based activities, and it looks at the everyday practices of editorial surveillance and the data and knowledge involved in doing so. In this regard, this study of Wikipedians’ mutual watching does not reveal an alternative version of supervision, but a complementary facet of current surveillance regimes. It furthers a more comprehensive understanding of how coercive care and control are administered in volunteer knowledge production online.

By looking at the technological features and social practices of information processing, this study offers the opportunity, once again, to review notions of panopticism. Introduced by Bentham as a plan for carceral control in the 19th century and popularized by Foucault, the panoptic archetype has been modified many times in light of the changing “scopic regimes of modernity” (Jay, 1988, p. 3). At present, institutions and subjects engaged in observing people, objects, and processes often seem to find themselves in polycentric social formations in which they are the focus of observation, too. Pointing to this plurality of experiences where no one is above or outside surveillance, de Certeau (1984) has noted that “behind the ‘monotheism’ of the dominant panoptical procedures, we might expect the existence and survival of a ‘polytheism’ of concealed and disseminated practices” (p. 188), which calls for novel metaphors. Hence, the basic design was extended and new terms were proposed like *synopticon*, *banopticon*, *nonopticon*, *superpanopticon*, or *omnipticon* so to reflect shifts in the settings, relations, and operations of surveillance (for overviews, see Bossewitch & Sinnreich, 2012; Elmer, 2003).

Against this background, Wikipedia also invites us to adapt the panoptic model, this time with respect to the watchful vigilance found among the users of social media platforms. It challenges the panoptic blueprint and particularly its inherent inclination toward structural imbalances in real and imagined forms of watching. Thus, it is questionable whether Wikipedia can best be viewed as a panopticon or even “hyperpanopticon” (Fierer-Blaess, 2011, p. 140) of a totalizing view. Indeed, most if not all actions are documented on the wiki. Yet individual users cannot see the full picture—they only look at details that come into focus. “Your watchlists,” a user compendium thus stated, “defines your own personal corner of the huge Wikipedia site” (Ayers, Matthews, & Yates, 2008, p. 319). In effect, a more adequate description might be to see Wikipedia and its form of editorial surveillance as an oligopticon, in which only sections of the spectrum of activities come into sight. “From oligoptica,” Latour (2005) explains, “sturdy but extremely narrow views of the (connected) whole are made possible” (p. 181).

Regarded as an oligopticon, Wikipedia’s operations are placed in the hands of activists who personally enact an environment of peer-to-peer surveillance without having an exhaustive survey that captures the whole domain. This is not to say that such constellation of a potentially reciprocal gaze is in

any way balanced and free of domination. Dropping the misleading idea of fixed dependencies among users does not mean that their regards and mediated interactions are not marked by power divides that are also embedded within the larger environment of digital information economy. So while their force lies in the ability to see different parts of the full picture from their vantage points, imbalance resides in expertise and authority over what information to discard and what to use for checks and subsequent inquiries. Differences in power and influence also concretize in the volunteers' impotence to determine the technological and economic preconditions of producing and consuming in networked environments, Terranova (2004) already noted, though their participation also has been welcomed to showcase alternatives of how to govern markets and states (Bauwens, 2012).

While "concertive control" (Sewell & Barker, 2006, p. 952) within the project mainly rests with the volunteer editors themselves, it also allows us to appreciate how the users rely on machine assistance to address improper contributions. Adopting a view on reciprocal surveillance hence also sheds light on the entanglement of human capabilities and technological capacities in situations where collaborators use interactional data and operational expertise to govern their interdependent activities. Furthermore, despite Wikipedia's appeals to the mutuality of vision and the unitary interests of its project members, the relations of seeing and being seen inevitably seem to lead to categorizations and divisions in conspicuity and insight. These divisions translate into a hierarchy of contributor rights and responsibilities, including the professional WMF organization that forms part of Wikipedia's scopic regime as well. Ultimately, their joint endeavor, namely to build an encyclopedia and maintain a community, has relied on the ability to balance the technological possibility to create a fine-grained and close to complete register of activities with the social need to forgive and forget so as to assume good faith and to continually return to cooperation.

In effect, the management of visibilities that is at the heart of the mutually agreed governance does not open up or hide all information. Instead, as Flyverbom (2016) points out, it makes it possible to curate sections of vision that refract and reconfigure, yet do not reproduce the objects and subjects they look at. Because their ways of seeing are fragmented, Wikipedians are not able to add up their multiple perspectives to create some larger sort of supervision. By patrolling a portion of the project, they instead construct confines over which they have intimate knowledge, while a large part of the enterprise necessarily escapes their selective gaze. Even the most prudent, versatile, or highest ranking contributors do not come to hold a position privileged enough to oversee what is going on: instead, they enter into relations of mutual surveillance. The activities of looking at fellow users, which are closely tied to the condition of being looked at by the same or other cooperators, necessarily involve participants in what Neyland (2007) has called "accountability networks" (p. 449). In principle, their relations of responsibility can be dissolved, yet they entail expectations and necessities that require further engagement and keep Wikipedians at Wikipedia.

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